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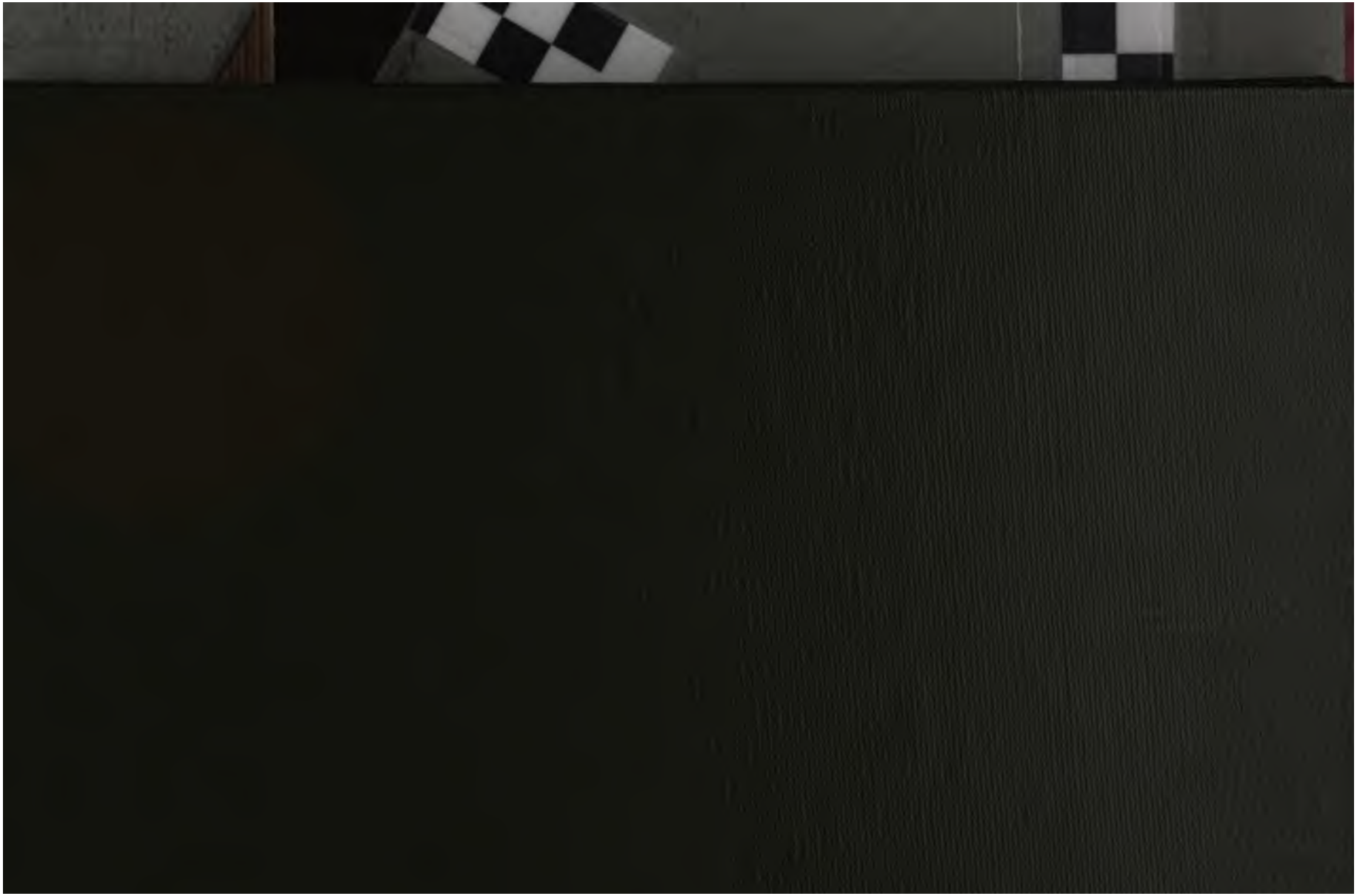

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WITH FLASHLIGHT AND RIFLE

VOL. II

WITH FLASHLIGHT AND RIFLE

A RECORD OF HUNTING ADVENTURES
AND OF STUDIES IN WILD LIFE IN
EQUATORIAL EAST AFRICA BY

C. G. SCHILLINGS

TRANSLATED BY

FREDERIC WHYTE

WITH AN INTRODUCTION BY

SIR H. H. JOHNSTON, G.C.M.G., K.C.B.

ILLUSTRATED WITH 302 OF THE AUTHOR'S "UNTOUCHED"
PHOTOGRAPHS TAKEN BY DAY AND NIGHT

VOL. II

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VULTURES FEEDING ON THE REMAINS OF A LION

XIX

More Lion-Hunting Experiences

THE narrative just given I have reproduced from the pages of *Der Weidmann* (*The Sportsman*) just as I wrote it at the time. I thought it better not to alter it in any way, as the events were still fresh in my mind when I set to work at it. In the course of the following years other travellers had opportunities of showing similar prowess as sportsmen on the Kikuyu tableland. In one case I was excelled in the number of lions killed in a single day. All these were cases of first-rate Austrian and English sportsmen with excellent weapons at their disposal. Had I possessed similar rifles instead of the obsolete single-barrelled one of unsatisfactory make I could have made a bigger bag. Under such difficult conditions, handicapped by so many unfavourable circumstances, weakened by fever, and with poor weapons, I have reason, I think, to be satisfied with what I did. Such a success, as I have already said, never came my way again.

I had a very exciting experience with an old maned lion in the autumn of 1899, on the right bank of the

Pangani River. Lions had been showing themselves for some days in the vicinity of the camp. Almost every night I had heard them roaring, chiefly at certain spots by the river. I had succeeded in getting a number of the striped hyænas which I had myself discovered. I had set traps—small, but strong, Weber's iron traps—in order to catch "kinguguas," as the natives call hyænas and jackals. It happened that an old lion stepped upon one of these and caught himself by one of the claws of the front paw, breaking the iron chain, of course, at once. Evidently he had not got the iron off his paw, his efforts to do so probably causing him too much pain. So he had taken himself off with the iron clinging to him, dragging his leg, step by step, for a couple of hours, probably into the thorn-thicket bordering upon the steep declivity of the Nyika. Little by little he had succeeded in almost destroying the snare with his teeth, but the spring and guard still clattered round his claw.

Early next morning we looked for his tracks, and followed them up through the thorn-thicket with great difficulty, expecting every moment to come upon the slipped-off snare. Suddenly I heard, straight in front of me, the deep growling of the infuriated lion, and at the same moment the beast started off afresh with the snare dangling beside him. I was surprised that the powerful beast could not shake it off, it was so small. Following him, always with the utmost caution, through the extraordinarily dense underwood, I got quite close to him five or six times, but each time he made away before I could get a shot at him.

Several times I actually caught sight of him straight

in front of me, but so indistinctly that I could not make sure of my shot. To shoot at a venture in such circumstances would have been suicide. Now, again, I hear him growling angrily. Every nerve is tense; the outlines of things seem to quiver in the shimmering sunlight reflected from the sand of the velt; the thorn, becoming denser and denser, made progress almost impossible. There!—another angry growl—the trap is heard to clatter several times against the ground, and, with a mighty stamping, the lion once again has made off. But this time, with a shake of his paw, he has thrown off the trap upon the sand, and our pursuit is in vain.

My clever Wandorobo, however, managed to make out his tracks as he went off, first with great leaps and bounds, then falling into a kind of ambling trot. Immediately I take up the pursuit afresh. Dripping with sweat, I keep on for about a quarter of an hour; then on again for as long, until at last I see the lion, still raging and growling, evidently in great pain from its wound, starting again on its flight, growling and stamping.

No one who has not heard it can form any notion of the way a full-grown lion simply thunders along over the hard ground of the velt. I follow him as speedily as I can, with all my pulses beating; several times I come within sight of him. At last I have him distinctly before me in a small glade. He turns his head towards me. My rifle rings out, and he falls, as though struck by lightning, with a dull thud and a dying growl. A second shot, fired for safety's sake, assures me of my coveted prey. My joy and satisfaction over my hard-won trophy know no bounds.

Now we realise, for the first time, that our pursuit has taken us nearly six hours, and that our throats are parched; but we bear up cheerfully. The thought of the royal booty we have captured against our expectations gives us new stores of strength, and enables us to forget our thirst and the scars and scratches we have got on face and hands from the thorns. Once again I had killed a big lion, and under exceptional conditions.

It has happened to me—only too often, unfortunately—to have merely come in sight of lions, whether single specimens or several of them together. Either I have seen them for a second only, and they have been out of range, or in high grass at close quarters when I have not been ready to fire, or just at the moment of their disappearing into a thicket. Thus it was once I came upon a lioness standing near a zebra she had been tearing to pieces. Numbers of vultures, drawn by the lioness's prey and settling upon the acacia-bushes all round, attracted my steps to the place, where the lioness had taken up her position in the early morning under the shade of a bush. But by the time I had got within two hundred paces she had taken cover and had made off over the side of the hill.

In very similar circumstances I happened once upon a lion and two lionesses in high grass, also without being able to fire a shot.

On another occasion I followed a lion-trail. The lion had killed a young zebra during the night, and had dragged it a long way over the velt to one of those rivulet-beds that dry up after the rainy season, there to devour it at

leisure. I had followed the tracks for some time, and was looking for a good way down into the gorge, when suddenly I saw the animal—a lioness it proved to be—in the distance. In another moment it had disappeared.

Late in the afternoon, one day in December 1900, coming back from a fruitless search after elephants, I observed a great number of vultures on the branches of a

MY FIRST LIONESS

leafless tree. Presently I saw a big-maned lion thundering along over a glade about four hundred paces away. A hasty shot missed its mark, its only effect being to make the lion increase its speed. The wind at the time was unfavourable. On this occasion I happened to be accompanied by my taxidermist Orgeich, and I decided, although we were both very tired already after a ten-hours' march, to pursue the lion. We set out after it at

once, and succeeded in tracking it. Curious to relate, the lion led us round and round almost in a circle for two hours or more! Often I came quite near him, but each time he would rush off again, then once more slow down to a walking-pace. At last I was obliged to give up the chase, as the tracks could no longer be made out—they crossed and re-crossed so often. With just a little better luck I might have succeeded in getting a shot, as the lion let us come so near him sometimes in the thicket. In contrast with the other lion which I had killed, this one gave out no sound all the time we were following him. The other growled chiefly, no doubt, on account of the pain he was suffering.

I had unusual luck in an adventure with lions which I met with on November 10th, 1903, between Meru Mountain and Kilimanjaro. We had been obliged to encamp out on the velt without water, and the following morning my caravan had to move forward to the nearest watering-place, seven hours' march away. Shortly before reaching this—a small swamp with a pool of muddy water in it—I noticed a great gathering of wild animals of all kinds, which, however, I left unmolested. Herds of oryx, zebras, and Grant's gazelles stood quite near us to right and left, and a great herd of giraffes. The splendid animals had come quite close before they saw me, and pounded away again in full flight. As usual, I was marching at the head of my caravan, followed, as always, by my guide and carriers. Suddenly one of my Wandorobo pointed to a spot to our left, among a lot of stinging-

nettles and tall dry grass, and exclaimed in low tones: "Lungatún!" I snatched my rifle out of the hands of my bearer, realising suddenly as I did so that it was not loaded with the proper cartridges, as I had no intention of doing any shooting that day.

However, there was no room for delay. The negro and I rushed to the spot where the lions had disappeared. With frightened face the Ndorobo pointed to where he had seen them. All this happened so quickly that there was no time to think of changing cartridges; all I could hope for was a snapshot at long range.

In front of us to the left rose some rocky hills. In between was a thicket of impenetrable thorn-bushes and bowstring hemp. Making my way breathlessly up the rocks, I suddenly saw in front of me, barely fifteen paces away, a large lioness standing broadside to me, her expressive head turned in my direction, and her glittering eyes fixed upon me. She was a magnificent sight.

Instinctively, and as quick as lightning, my eye darted in every direction all round her, to see if there were any other lions by, then in the fraction of a second I pointed my rifle at her head; but before I could pull the trigger she made an immense spring forward, high in the air with outstretched paws, and disappeared into the thicket. Pull the trigger, however, I did, and the report rang out while she was in the air.

It was an exciting moment for me, for it was probable that the animal, unless mortally wounded, would come for me. Only with lead-tipped bullets can you hope to effect a mortal wound under such conditions? Wounded lions

are apt to be dangerous. But this time I was in luck; fifty paces away the lioness lay dead, killed by the neatest snap-shot that I ever achieved, right through the shoulder.

The male lion, which the Wandorobo had seen at the same time, had unfortunately disappeared in the meantime. My taxidermist, who came up now with my men, and whom I now told of my success, went searching all over the place for the body. His delight was almost as great as my own when at last he saw the beautiful lioness stretched out before him.

By way of contrast to these experiences of mine, I shall quote here the description of a lion-hunt which took place in the year 1813, from the pen of John Campbell. Those were the times in which elephants, rhinoceroses, and giraffes were still to be found in those regions in South-West Africa now belonging to Germany, before the numbers of all the other wild animals had begun to be thinned. In those days the sentries on the ramparts of Cape Town were still treated to nocturnal concerts by the lions.

In South Africa lions were still numerous at this time, and in the neighbourhood of Graaf Reynet this John Campbell, a clergyman in the service of an English missionary society, met two lions one day in the course of his travels. Here, in his own words, the quaint simplicity of which I leave absolutely unaltered, is his description of how he killed one of them.

"When approaching a fountain of water, where we intended to halt, two of the horsemen came galloping towards our wagons, on which my wagon-driver told me they had seen a lion. On reaching us they informed us

that two lions were crouching among the reeds below. All the wagons immediately drew up on an ascent opposite the place where they lay, with their wheels firmly chained, lest the roaring or appearing of the lions should terrify the oxen and make them run off with the wagons, which frequently happens on such occasions. Thirteen men then drew up, about fifty yards from the

LIONESS PHOTOGRAPHED AT A DISTANCE OF ONLY ABOUT THREE YARDS

lions, with their loaded muskets; and such as were only to be spectators stood upon a heap of rocks, about fifty yards beyond them, guarded by three armed men, lest the lions should not be wounded, or only slightly, and be able to rush upon us. When all this was in readiness, the men below poured a volley of bullets towards the animals, when one of them, the male, made off, seemingly slightly wounded; but the other was disabled, so that it

remained in the same position. The dogs ran towards her, making a great noise, but ventured no nearer than five or six yards. On the second fire she was shot dead. A bullet was found under the skin, which she must have received long before, as the wound was completely healed. She had received many wounds from our people, especially a severe one in the mouth."

Thus was carried out a lion-hunt in South Africa a hundred years ago. Elsewhere the missionary enlarged frequently on the habits and customs of lions—from hearsay, naturally—and states, amongst other things, that a lion will carry away an ox upon his back and a sheep in his mouth. He bases this statement upon the difference in the weights of the two animals.

If it must be admitted that the killing of lions in those days, with the primitive guns then in use, was a much more dangerous undertaking than it is in these days of perfected rifles, there is yet no reason to be surprised that these animals were so quickly exterminated wherever the colonists settled down. We have a picture presented to us here of a body of Europeans with about thirteen muskets setting out cautiously upon their warlike enterprise. How far less courage is involved in this kind of thing than in the hunting of lions with sword and spear, as was the custom of the natives in those days.

The lion's knell had sounded already then. Now he is disappearing quickly. Père Guillemé, a missionary, who was stationed for many years at Tanganyika, tells me that the "white fathers" there have killed thirty-seven lions in the course of only four years—for the most part by the

use of strychnine, with which they have poisoned the remains of animals killed by lions.

In 1900 I had an encounter with three lions, which might easily have proved fatal to me. After a march of nearly ten hours in the driest season, my caravan had come to the foot of a hill and my tired men had pitched camp. Following the course of a stream, I went out for a short walk round the camp, armed, contrary to my usual custom, with only a fowling-piece. A number of bald fruit-pigeons (*Vinago calva nudirostris*) presently caught my attention, and I went after several, which were perched upon the branches of a lot of fruit-trees in the thick brushwood of the river-banks. Thus occupied I had strayed about a thousand paces from the camp, which was now out of sight. The pigeons were very shy. Suddenly I came upon the tracks of several lions.

Almost involuntarily I followed these for a couple of hundred yards or so, and was just about to make my way down into the dried-up bed of a freshet, which acts as a tributary to the stream in the rainy season, when I became conscious of a shadow to my left. Turning round, I beheld a lioness twenty-five paces off, eyeing me quietly. She stood in a small glade in the thorn-thicket, and I concluded that she had made a resting-place for herself among the dense green grass by the side of the stream. Almost simultaneously I saw, six or eight paces from her, two other lions moving forward, half covered by the grass. All three formed a most impressive sight, witnessed thus from so near.

For several seconds neither I nor the lions made a move—I bitterly regretting that I had brought only my

fowling-piece, loaded with No. 8 cartridges, the only cartridges I had with me. But the lioness presently turned away from me quite calmly, took several steps along the border of the gorge, and then disappeared suddenly among the bushes. The others disappeared simultaneously. I waited motionless for a minute where I was, then hastened back to the camp to equip myself properly for a pursuit, when on returning I found that the tracks of the lioness could not be made out. I at once erected a trap for her, tying up a white steer as a bait.

Shortly after ten o'clock that night I heard an angry roar, and early the next morning I found a large lion with a heavy mane caught in the trap, which he had dragged away into the thorn-thicket several hundred yards. He had not hurt himself in the least with the chain or iron. While I was taking a photograph of him he made a startlingly quick and determined rush at me, in spite of his encumbrances; but I brought him down with a single shot. Next night two lionesses were entrapped. And as after this good haul no other lions were to be seen or heard near the stream, I concluded that these must have been the three lions I had met.

Here I may observe that lions and all other cats scarcely injure themselves at all when caught by the paw in these traps, unlike hyænas, jackals, foxes, and other animals. I attribute this to the comparatively quiet bearing of the cat tribe when they find themselves in such difficulties.

I have said that lions are not often to be met with by daylight in the wilderness; but there have been other occasions, of course, during my years in Africa, when

their unexpected appearance has put me in a tight corner. One lioness I can still see standing a few paces away from me, outlined clearly against the dun-coloured, sun-scorched velt, her yellow eyes gleaming as they watch me. But the traveller may have to wait years and years for such an experience. Among sportsmen who have been lucky in this respect may be mentioned Duke Adolf Friedrich von Mecklenburg, who shot a fine lion on his very first hunt in German East Africa. This is a record feat.

Never shall I forget the exciting hours I spent one day in 1899 following up the tracks of a party of no less than fourteen lions. Five hours it took me to get within sight of them, in a thorny jungle with an undergrowth of bowstring hemp. I had never come across so large a party before. The tracks of their mighty paws stood out clearly in the fine dust of the velt.

There is an extraordinary fascination in following up tracks of wild animals in this way, more or less haphazard. As you move forward your imagination goes ahead of you, picturing in a hundred different fashions the way in which you will at last come upon your quarry. In this case—perhaps it was just as well for me—the lions became aware of me as they lay in the shade of some acacia-trees, just as I was scrambling up a hill, and in a moment they had all disappeared

When I got to the spot where they had been lying, I was just in time to catch a last glimpse of them disappearing into a thicket at the bottom of the hill. A strong smell of lions was there to reinforce the tracks and prove to my senses that I was not the victim of an illusion. Such

experiences are exasperating to the hunter, but it is something for the mere observer to have had the monopoly of so wonderful a spectacle. The same kind of thing, on a lesser scale, happened to me often in East Africa.

I was particularly unlucky on one occasion when I encountered the finest and oldest lion I have ever seen. It was while I was stalking waterbuck that he came into sight. Half-hidden as he was in the bush, I could not at first make out what kind of animal he was. In another second he came into full view, only to turn round immediately and make off. My bullet was too late; but a scanty streak of blood showed me that it had not completely missed him. Great were my annoyance and disappointment about a fortnight later to learn that the remains of a large-maned lion had been found near this spot. They were lying in so dense a thicket that even the vultures had not been able to get at him. The flesh had been completely devoured by maggots; but from the extraordinary number of long hairs I could see that it must have had a wonderful mane, almost black. However, I got possession of its mighty skull, from which some teeth were missing, proving that it must have been of considerable age. I cannot say absolutely that this must have been the lion at which I had shot, but it certainly seems most probable.

Among the thirty-seven lions which I caught by means of the iron trap manufactured by R. Weber, there were several strong, old specimens which had dragged away the traps for several miles. The killing of them entailed very difficult and dangerous pursuits, as in these circumstances they almost always made for cover.

C. G. Schillings, phot.

WHILE A LIONESS KILLED THE OX WITH A TERRIBLE BITE ON THE NECK, A MANED LION SEIZE[illegible]

Among my donkeys and cattle there was always some animal available as bait for the lions, owing to the ravages of the tsetse-fly. When one of them had been attacked by this scourge, instant death from a bite by a lion was a real release from the lingering agony of death by blood-poisoning.

Often the lions would have so covered themselves over with reeds and grass that even at a distance of ten paces I could hardly make them out, and had to climb a tree to get a shot at them.

My most notable exploit, as regards the capturing of lions, was the bagging of a party of nine, consisting of three old lionesses and six others, of which four were full-grown young ones. Three had appeared one night, four the next, and the following night the last two. This was the only time I have known an old lioness to be tempted successfully by a goat. I had, however, so placed the trap and the goat that the lioness, so soon as she had seized the latter, was able to get off unhurt, and make her way again into a sedgy swamp hard by. There she kept so quiet that one of my men wandering past stick in hand, ignorant of his danger, almost knocked up against her. Fortunately he escaped. He took to his heels and never stopped until he got safe back to camp. It is astonishing how quickly lions, and even leopards and hyænas, are able to drag these heavy traps, which weigh about thirty kilograms, and which have anchors stuck in the ground. Some branches of the Wanyamwesi people are very fond of lion-flesh for food. They believe that it makes them strong and brave; they are particularly fond of the fat parts. The nine lions

taken by me in the three nights all made their way into the stomachs of my Wanyamwesi, although their chief man declared to me, when the seventh lion was finished, that he thought he would like some other sort of vension for a change! A new case of *toujours perdrix*! We brought away with us in gourds, however, a supply of the surplus fat from the lions, and it served for quite a long time as a much relished delicacy. Almost on the same spot where I had killed the nine lions, I tried a year later to get hold of an old lioness accompanied by several small cubs; judging by the tracks on three successive nights, the whole family visited the neighbourhood of my traps without, however, paying any attention to the bait.

It was long my keen desire to bring back to Europe a full-grown lion alive, and the Berlin Zoological Gardens had been good enough to place at my disposal for this purpose several transportable cases, capable of being taken to pieces; however, the impossibility of getting bearers to carry an iron chest itself weighing 500 lb. all the way from the wilderness to the coast, obliged me to give up all hope of this. Since the days of the Romans this feat has never been achieved. All the lions that have been brought to Europe have been caught young, and have been brought up in captivity, including the so-called forest-bred lions and those presented as gifts by Oriental rulers. So far as I know, we are without information as to the means by which the ancients got possession of the great number of lions which made their appearance in the arena. Hundreds of lions were sometimes killed in the arena in a single show, though a good many of these may have been young ones.

THE CAMP

XX

Leopards

THE leopard undoubtedly plays the principal *rôle* among all the beasts of prey to be found in East Africa. Unlike the lion, he is to be found everywhere. The colouring of the leopard, so distinct and conspicuous when seen in a cage, blends so curiously with the animal's natural surroundings as to become almost imperceptible. So much so that, even by day, he is able to pass close to you without being observed.

Leopards have no special predilection for settled haunts, though they are chiefly to be found in rocky mountain-passes where there is plenty of cover. They are fine climbers, and often pass the day in the airy and shady heights of a tree-top. I know of a case of a leopard springing upon a negro, who was up a mango-tree, and killing him instantly with a bite on the throat; and I have heard of several other such occurrences.

It is difficult to give an idea of the lightning speed

with which leopards move, either when attacking or in full flight. Curious to relate, although these animals are so common, I find, from my diary, that I only met them at close quarters twelve times—not counting the numbers I have trapped. These encounters were always sudden and unforeseen.

Of peculiar interest was an encounter I had with a leopard near the town of Pangani, on the very day of my setting out on my great expedition of 1899. Accompanied by only one man, I had returned to the town to obtain some more reserve carriers. At the head of these I was hurrying in the evening back to my camp, when I suddenly became aware of the continuous shrieking of a troop of baboons. From the cries and shrieks of the apes I concluded that a leopard had chased them, and, as some old and large male baboons peered from a monkey-bread-tree into the underwood close to our path, with signs of rage and cries of alarm, I attempted to get nearer, my gun ready in my hand. The underwood was almost impenetrable, and it seemed to me as if the leopard must be busy tearing a baboon to pieces under a baobab-tree.

After a few steps in the direction of the monkeys, I heard something make off in the jungle, and at the same time the baboons clambered after it, whatever it was, screaming and chattering, up in the safe altitudes of the tree-tops. As the thicket grew less dense I was able to get along more quickly, and, just as I was descending a glen, I noticed to the left, some thirty paces off, a powerful leopard, which had killed a young baboon, and

C. G. Schillings, phot.

A SPOTTED HYÆNA ABOUT TO SPRING ON A DONKEY

was dragging it along by the neck. The animal noticed me the moment that I, hindered by some branches, lifted up my rifle to shoot, and it disappeared with a lightning-like flash, leaving the monkey behind. The whole troop of them followed him high up in the branches. Unfortunately I had to make up for lost time and to hurry back to camp, and so was unable to seek out the leopard and to kill him. Very likely the "chui" was opportunely chased and devoured by lions; I know that this happened in two other such cases.

I have several times come in contact with leopards in various parts of the velt, especially when I have approached their haunts, which, during the midday hour, are generally in the tall grass. Once I nearly trod on a leopard. It was out in the open, and he slipped out from between some bushes so suddenly that I involuntarily started back. I missed my first shot at him, and although my second wounded him I did not bring him down.

To shoot a leopard in full flight with a rifle is a most difficult feat. You have reason to rejoice if you miss completely, and do not merely graze him, for a wounded leopard is a most dangerous opponent. At first I could not forbear shooting at a leopard whenever I came upon one, but I learnt by experience to become more cautious.

How dangerous a leopard can be was brought home to me by one experience I had. I had discovered a track in the sand made by a leopard trailing some booty after him. Cautiously I approached a gully made by the rain to which the track led me. I had soon made the circuit

of this, and ascertained that the animal could not yet have left it. Then suddenly I spotted the leopard, who was lying on top of a small antelope under the root of a tree which had been washed down by the rain.

Man and beast espied each other at the same moment. Serpent-like the leopard crept, leaving his prey in the recess, to a corner of the gully, intending to take flight! Quick as lightning I fired, but aimed too far back and only wounded him. Almost at the same moment the shouts of my people, who had stayed behind at the entrance to the gully, told me that they had seen the leopard. The animal was bleeding profusely. Cautiously, step by step, I crept after him, until I saw him crouching again where I had fired at him first, and half hidden by some roots. The distance between us was about five-and-twenty paces. The sides of the gully were steep and hard to climb.

The moment I raised my rifle again to shoot, the leopard sprang towards me. The next instant he seemed to touch me! Then in another instant he was gone. He had sprung right back again and disappeared in the gully! It had all happened in the fraction of a second, and I had not time to fire again. It must have been the way we involuntarily drew back—I and the two men who were with me—that caused the beast suddenly to take to flight.

I shall never forget this situation, nor the sharp, short snarls uttered by the leopard. Afterwards I found several drops of blood in the sand, only a few inches from where I had stood, and my gaiters also were be-

spattered—a proof of how close the animal had been. A few minutes later I came upon the leopard again, and this time a well-placed bullet did for him. But I attribute this to good luck rather than to my own skill.

Such attacks by leopards may easily terminate fatally. Mr. Hall, my host in Fort Smith at Kikuyu, related to me, among other stories, the evening before I shot my three lions in that vicinity, that whilst hunting antelopes near the Nayasha Lake he met with a mishap because he had incautiously shot at a "chui." He was only convalescent at the time, in fact just risen from a sick-bed (after an unlucky encounter with a rhinoceros), and was hunting again for the first time, accompanied by an Askari, when he went after some impallas. A leopard had the same end in view, but was speedily shot at by Mr. Hall. Quick as lightning the beast sprang on the hunter and hugged him tight; undoubtedly the leopard would have killed him, had not the Askari shot the animal while actually on his master. Mr. Hall was injured for a very long time and was permanently lamed, the sinews of one leg being torn.

On two other occasions I have been attacked by wounded leopards, but happily I was able to kill the enraged beasts in time. I can only advise the greatest caution when hunting these animals. The natives declare that leopards have a pronounced taste for human flesh, like the man-eating tigers of India. I have not been able to obtain positive evidence of the truth of this, but I will not deny that certain old leopards distinguish

when quite young. Young leopards were brought to me in the month of February; and in Zanzibar I obtained at the same time two cubs, which I brought with me to Europe.

The call of the leopard is a peculiar, snarling, mewing, characteristically cat-like cry, and is often to be heard at evening and during the night; I have sometimes heard it in the afternoon. Many authors declare that leopards seldom, if ever, touch a carcase as their prey, but rather seek some live animal to drink its blood. I have met with no evidence in proof of this statement, so often made as if from personal observation.

As a matter of fact, I have caught about forty leopards, and they were almost all secured by traps skilfully baited with dead game, whereas traps which were on certain occasions baited with live goats attracted the leopards less than the others. I have learnt, too, that my method of capture became much appreciated in East Africa after I had obtained such excellent results. Naturally many hundreds of my carriers have given descriptions of it all over the country.

For two reasons these results which I obtained are perfectly comprehensible. Firstly leopards, according to several observations I have made, are accustomed to hang up the remnants of their prey on the branches of trees or bushes, sometimes quite high up, after they have devoured the heart and liver and buried the entrails. In this way the leopard unquestionably helps another of his kind to a meal that he has not been able to obtain for himself. In consequence of this habit the attention

of the leopard is drawn to any remains of flesh that he may happen to find.

Leopards are endowed with a good share of slyness and cunning—qualities which often make them avoid the snares laid for them. A well-set trap, baited with carcase, arouses their suspicion less than a wooden trap provided with a live goat. When I caught a leopard in an iron trap I was almost sure to get his mate a night or two after. I have caught and shot male leopards that weighed 145 lb.; the females weigh considerably less.

The leopard is a most dangerous animal when ensnared. It is an indication of his savage nature that on the approach of man he always tries to get as near as possible, raging, growling, and snarling the while. Should he manage to free himself from the iron, he is sure to make a violent attack on any one near. He climbs up the tree as far as the chains of the snare will allow.

One morning I was informed that a leopard had been caught in a small trap which Orgeich, my taxidermist, had set the night before. "It is well set," he said briefly, "he will be caught fast!" This assurance strengthened my belief that the trap, as usual, had been fastened on to a tree-trunk by means of a chain. My belief soon proved to be an error. As I approached the place where the trap had been set, a little bushy spot in the Pori, I saw the leopard making for me some hundred and fifty paces off, trailing after him quite easily the iron chain and a wooden stake attached. This all happened so quickly that I had barely time to spring behind a little thorn-bush, whence I killed the enraged beast with a well-aimed shot.

C. G. Schillings, phot.

MY TAXIDERMIST, WILLIAM ORGEICH, WHO SHARED ALL MY LABOURS AND DIFFICULTIES, AND CONTRIVED TO MAKE OUR MEN DO THEIR WORK WITHOUT STRIKING A SINGLE ONE OF THEM

Another time, at the beginning of my severe illness in 1902, on the banks of the Pangani River, an old and very powerful leopard had taken flight with the trap and grapnel and gone some distance in the sedge-grass, where I found him after following his track for some time. The reedy swamp, then dried up, was almost impassable, and it seemed marvellous to me how the animal, hampered with trap, chain, and staple, was able to get there at all. At each step we expected to come upon the leopard. We—that is, Captain Merker and myself—followed the track of the trap, in company with some blacks. Our companions soon found the situation unbearable, and only the trustiest of them remained with us.

On we went in the seething heat, carefully looking round us, and poking in the thick undergrowth with long poles from time to time. Suddenly a snarling and a clanking of chains were distinctly heard. Now was the time! Meanwhile we two "Wasungu" (Europeans) pushed our way cautiously in the marsh. Now and again we heard the ominous snarl—the clank of the chain. The ground being so exceedingly dry it was impossible to make out a track; we thought for some time that it was not with a full-grown leopard that we had to do.

We pushed forward further and further. Suddenly a deep growl made the natives take to their heels, calling out that they had clearly seen the head of a male lion! They stuck to their assertion. Slowly we sought, inch by inch, to find a freer outlook in the marsh, by beating down the reeds with our poles; Captain Merker and I, holding our rifles well up and expecting to see the beast

of prey appear at every moment or rustle! But, wonderful to relate, in spite of the continuous snarling we found it impossible to locate the exact spot where the beast was hiding, and could get no further on account of the increasing thickness of the reeds. So we decided to fire several shots in the unexplored direction to kill the supposed lion.

As appeared later the leopard was well hidden in a hippopotamus-haunt. I cannot say how much ammunition we had to expend. At last one of us must have managed to give the leopard his death-wound, judging by the silence which followed. Even then it was quite a long time before we managed to make our way inch by inch to the dead beast, when we saw a fine specimen of an old male leopard.

In the Masai district hunting-leopards (*Cynælurus guttatus*) are very rare, and I have only seen two individuals, and then learnt nothing about them. But the "chui" of the Waswahili, the "ol ugaru geri" of the Masai, and the "mellila" of the Wandorobo is to be found in countless thousands nightly throughout the Nyika. He will long survive the last lion.

PRINCE LÖWENSTEIN USED TO TAKE HIS SHARE OF THE WORK OF PREPARING THE ORNITHOLOGICAL SPECIMENS

XXI

The Hyæna-Dog, the Lynx, the Wild Cat, and the Otter

THE sight of a pack of hyæna-dogs (*Lycaon pictus*) after their prey is one not easily forgotten. For the most part I have had only fleeting glimpses of them, whether on the plains or on the caravan-roads by the coast, or by the marshes, as they rushed after their quarry in long springs, two or three close on the track, the others following close behind, so as to cut off the retreat if necessary. The wonderful picture of this chase passes quickly under a whirlwind of dust, and is more divined than perceived, only the heads of the prey and pursuers rising now and again above the reeds in the marsh. It passes before one like a phantom.

I have found the hyæna-dog very rare in those districts through which I have travelled. This has been the experience also of trustworthy observers in British East Africa.

All kinds of game, even the strongest antelopes, fall

a prey to these hyæna-dogs. Close to the railway-station at Korogwe I once saw them after a waterbuck, which, however, was shot by an official of the line before they could get at it. On another occasion I saw a herd of fourteen hyæna-dogs hunting the gigantic eland, and I have seen them after small antelopes as well.

In the year 1899 I had been following for nearly four hours the blood-tracks of a bull eland that I had shot, when, suddenly, still hastening forward, I saw to one side of me a troop of hyæna-dogs taking their noon-tide siesta under the shade of an acacia. The moment they saw me they slid off in all directions with their tails between their legs. Then they reassembled, halting for a moment in their flight and barking at me in strangely high-pitched tones—they were regular dog-like barks. With their ears pointed they came forward now like tame dogs in my direction until they got to within five-and-twenty yards, when they took to flight again to one side, and the whole game began afresh.

I was so engrossed in this rare sight that I did not shoot, but remained quietly crouching with my men. This encouraged the dogs to come nearer.

This settled for me the question as to whether or not hyæna-dogs attack men. The natives say they often go for unarmed men.

I do not know how long this might have gone on, but after about ten minutes the dogs seemed to have satisfied their curiosity, and some disappeared in the dry grass. I thought it time now to bring down two specimens with a double shot, whereat all the others took to flight.

C. G. Schillings, phot

SPOTTED HYÆNA MAKING OFF WITH THE BODY OF AN ASS

J. G. Millais[1] speaks of the "good old days" in South Africa, when a well-mounted man of average weight could bring down a swift roan antelope (*Hippotragus equinus*) after a chase of four miles, a waterbuck after

A GOOD EXAMPLE OF PROTECTIVE RESEMBLANCE. A WOUNDED BULL ELAND LYING UNDER THE SHADE OF A THORN-TREE

a chase of three miles, and an old kudu bull after a chase of two. These animals can have very little chance of escape, therefore, when chased by hyæna-dogs.

[1] J. G. Millais, *A Breath from the Veldt.*

Hyæna-dogs, besides attacking the prey they actually sight, are given to following up tracks. They have a peculiar way of biting at the stomach of the pursued animal and tearing out the entrails. In this way they overpower even large antelopes. Twice I have observed them do this, and English authors as well as natives bear out what I say.

The extraordinarily bright colouring of hyæna-dogs is toned down when seen from a distance. They look then uniformly dark and stand out conspicuously from their surroundings. There is not so much need for their coats to harmonise with the surroundings, as they do not seize their prey by stealth, but follow their tracks and chase them in hot pursuit.

I once found five hyæna-dogs, and on another occasion two, resting in the shade at midday; another time I came upon a herd just as they were devouring a gerenuk-gazelle. On the whole they seem, as already stated, not to be very common in the Masai country, and my own observations lead me to the conclusion that they are not so harmful as people make out.

I consider it a great mistake to make scapegoats of the so-called "harmful" animals. The colonist does not realise that he cannot exterminate these without affecting the supply of other kinds of animals which are of value to him. When we make our way into new countries we have to consider the fauna as a whole.

By destroying certain animals that seem to us objectionable, we may injure all the others. The expert in these matters knows how our wild life at home is apt

C. G. Schillings, phot.

SCENE ON THE BANKS OF THE PANGANI RIVER

to suffer, from undue regard for the weak and persistent pursuit of the strong.

Hyæna-dogs kept in captivity are extraordinarily savage, yet show a decided predilection for domesticated dogs. The idea that it would be possible to produce a

A TREE-BADGER'S HOME

useful hound for the tropics by the crossing of such heterogeneous animals is hardly to be taken seriously, apart from the improbability of such a crossing being effected. The sight of a troop of hyæna-dogs in full chase made me long for a good hunter!

Among the other small animals of prey in East Africa we find some beautiful wild cats and lynxes. Among the cat tribe the serval (*Felis serval*) is much more common than the leopard. It is a long-limbed kind of cat, with black spots on a yellow ground, which frequents the bushes. The serval is an animal of nocturnal habits. I often managed to secure specimens in traps, but

HUNDREDS OF VULTURES AND SOME MARABOUS AND JACKALS

only occasionally did I happen upon one by day. It was long before I succeeded in catching a perfectly black specimen.

On the occasions of my numerous elephant-hunts to the west of Kilimanjaro I came upon a very shy black cat at a certain spot continually. It was at a point on the high velt at a height of about 7,000 feet. While waiting for the elephants to make their appearance

C. G. Schillings, phot.

SPOTTED HYÆNA AND THREE JACKALS FEEDING ON A CARCASE. A SECOND HYÆNA MAY BE DESCRIED IN THE BACKGROUND

in the wooded ravines below, I had many opportunities of watching her springing nimbly over the dense undergrowth, as she made her escape, but I could never get a shot at her. I had traps set for her, but without the desired effect, for it was only spotted hyænas that were caught nightly. One morning, however, my taxidermist came to me with the joyful news: "A black serval has been caught." And with these words he held out before me a wonderful black female cat, on whose coat marks still blacker in shade were clearly perceptible. This, it would seem, is characteristic of these black servals, as it is of the blackish genet already referred to. I have noticed something of the same kind with dapple-grey horses. Next morning I caught another serval, a male, normally coloured —evidently the mate of the black female—in the same snare.

The catching of this serval was a very satisfactory outcome of long days of watching and waiting. Hour after hour I had sat scanning the great lonely mountain through my field-glasses, on the look-out for signs of animal life, with no break in the monotonous silence but the mournful cry of the great grey shrike, or the fluttering by of mating pigeons (*Columba arquatrix*), or the momentary appearance of a black lynx, or, more rarely, of the grey wild cat (*Felis libyca*), a long-tailed and very timid species, more usually found on the plains. I got hold of four specimens of this animal. It is singularly like our domestic cat, both in appearance and manner of life. The caracal (*Caracal nubicus*), an East African species of lynx, I also came upon.

Once when I was after some dwarf antelopes (*Madoqua kirki*) a small lynx came close to me, evidently intent on the same quarry. This gave me an excellent opportunity of observing its habits, and I was able to kill it as a valuable addition to my collection.

Another lynx came quite close to me when I was after some ostriches, and gave me an opportunity of bringing off rather a remarkable double shot. The ostriches—sixty-four of them—had been near my camp for some days, but as they were moulting I had left them alone. However, I decided to shoot one of them for the collection of the Royal Museum at Berlin. It was not easy to get near it, but at last I brought it down at a distance of about two hundred paces. Then it was that the lynx came in sight, and with my second bullet I bagged it.

The desert lynx is not to be met with so often in East Africa, I think, as in the north and south. The genets remain in hiding by daylight, and are often caught in traps. I once killed one which had sought refuge under the gable of a roof at Moshi.

Generally speaking, the sportsman seldom comes across these smaller beasts of prey—such as genets, honey-badgers, ichneumons, etc.—in the daytime. I myself came upon an otter only once, though I found that the natives living by Lake Victoria possessed skins of them.

So it is at home. I remember that I very seldom saw these animals in daylight, and then only for a moment, when in my boyhood I followed their tracks over the Eifel Mountains on my father's estate.

THE LAFITTI MOUNTAINS

XXII

The Ant-Bear, the Porcupine, the Wild Boar, and smaller Mammals

THERE are strange dwellers on the velt, which the hunter is not likely to come across unless he is exceptionally lucky, or unless he goes to great trouble in ferreting them out of their burrows. Among these are the ant-bear (*Orycteropus wertheri*) and the porcupine (*Hystrix africæ-australis*).

One of the greatest authorities upon the African fauna, Mr. Jackson, though constantly on the look-out for porcupines during his ten years' residence in East Africa, never once came upon one out in the open. The porcupine is nocturnal in its habits, and spends the day in its burrow. I have never seen it at large, though I have picked up hundreds of dropped quills. Natives have brought me specimens of the animal, which they have grubbed out of their burrows.

The ant-bear, a strange-looking animal with long snout and long tail and very strong sharp claws, makes a practice during the wet season of destroying the large ant-hills to be seen everywhere on the velt, in order to feed upon the milliards of white ants thus rendered homeless. Stretching out its long thin tongue, it licks them up in hundreds. Professor Matschie says of the ant-bear that it is a marvellous creature, possessing the snout of a pig, the head of an ant-eater, the ears of an ass, the legs of an armadillo, and the body of a kangaroo. A photograph of the ant-bear by night in the act of destroying the ant-hills in the Masai-Nyika country would be something worth trying for. It would, however, be a very troublesome undertaking —I myself was unable to attempt it. The ant-bear lives in large deep burrows which you see in hundreds on the velt. Whilst hunting other game I have, dozens of times, fallen into these holes waist-deep when the velt was covered with grass. It would be useless to set traps in these holes in the dry season, or to attempt to get the animals out. During the drought they seem to have a winter sleep.

The natives are sometimes able to get hold of ant-bears, and it was thus I was enabled to send some skins and skeletons to Germany. The Royal Museum of Natural History in Berlin had at the time only two or three specimens of the species, including one which had been presented by Captain Waldemar Werther, and to which his name has been attached.

Only twice on the velt did I meet the beautiful black-and-white honey-badger or ratel (*Mellivora ratel*),

C. G. Schillings, phot.

which, leading as it does, a nocturnal existence, is very seldom seen by man. The honey-badger has a predilection for flesh, and on this account is often trapped. Its vitality is quite extraordinary, and surpasses that of our own badger. Some years ago I surprised an old honey-badger with a very small young one on the velt, and was able to catch both.

Now and again you may get a glimpse of the long-eared fox (*Otocyon megalotis*), a curiously graceful animal with very long drooping ears, as it takes to flight almost from under your feet. You are apt to tread on their flat burrows, which lie just under the surface of the ground. These animals live almost entirely on insects; the stomachs of those I killed were full of beetles. In the month of July I found no less than ten full-grown specimens of this animal in one burrow.

Every traveller on the velt must have some time or other come across that elegant marten-like animal the ichneumon. Of many kinds, and varying in size from that of a large weasel to that of a cat, they sometimes take up their abode in deserted ant-hills, in which also squirrels are sometimes to be found.

Ichneumons move about over the velt in parties seeking for prey. They eat anything that they can get hold of, animal or vegetable. Insinuating their way through the grass, packed closely together in a long undulating *queue*, they look in the distance like monstrous snakes. Now and again, as they move along, one of them will raise its head like a marmot and look round. Then all the others will follow its example, and with a clear cry of alarm they

scurry back to their nearest hiding-place. Should this be an ant-hill, and we have the patience to wait an hour or two in hiding, we shall first see one little head, then several, peer out of the holes of their clay fortress, which soon is alive again with their activity. Now playing and romping, now assuring themselves of their safety, the little sprites run round and round the ant-hill. Squirrels behave in a similar way, though not in large numbers—alone always, or in pairs.

Sometimes ichneumons are found in company with rock-badgers (*Procavia*) which, in like manner, often take up their abode in ant-hills. More frequently, however, they are to be found in the rocky districts of the hills, high up or low down, according to the season of the year.

These animals, as well as the tree-badgers, which dwell chiefly in forests, and especially in mountain forests, are closely allied to the rhinoceroses, a fact which is hardly credible at first sight. In German East Africa there are three kinds of rock-badgers (*Procavia johnstoni*, *Pr. mossambica*, and *Pr. matschiei*), and two kinds of tree-badgers (*Dendrohyrax validus*, and *D. neumanni*), curious, tiny, flat-footed animals. They are very like marmots in their ways, and the old experienced rock-badgers especially are not easy to ensnare. The tree-badgers have a quaint, scolding kind of cry.

Hardly has the sun gone down and the camp-fires been lit when we suddenly hear above our heads in the great forest a rustling, a peculiar chuckling and mewing

of the tiny creatures there. Like elves these tree-badgers play about on the trunks of the trees, and the whole night they are coming and going over our heads. I have heard them, too, in wooded ravines on the plains, when I have been after elephants. . In the branches of leafy trees they could be heard the whole night, their cries mingling with that of a cuckoo (*Centropus superciliosus*) that often uttered its call in the early morning hours. "Tippu-tippu" the coast-people call this cuckoo.

Tree-badgers are often visible by daylight. You may be making your way into the gloomy recesses of the forest, where the thick foliage shuts out the light of day, and the whole place seems void of any sign of animal life. Suddenly a shrill cry of warning seems to rise from the red-footed francolin at your feet, and, terrified by its own cry, the rabbit-like little creatures run skilfully up the juniper and other high trees, to quickly disappear in the holes and crannies of the branches. These are the tree-badgers, the *peléle* of the natives, the fur of which is made into coats and is much prized by the Europeans, who have lately taken to exporting it.

The natives catch the *peléles* in snares, and immense numbers of these little beasts have been taken of late years. The pursuit of the tree-badger is carried on with great zest, like that of the Bega monkey, so that the animal is rapidly decreasing in numbers. The hut-tax imposed on the natives has the effect of inciting them to a much greater destruction of the animals than they would under-

take of their own accord, as they can raise money by selling the skins to the trader.

Immense quantities of skins find their way now to the trade-centres. In Aden and Marseilles, for instance, thousands and thousands of antelope-skins are sometimes to be found. It is an open secret that the greater number of these skins are procured by armed native hunters for the agents of European firms. The British Government has long hampered the once thriving trade in antelope-hides, by a very severe tax on the steamers running to Aden, and this seems to be the only means of protecting game. Even so, hundreds of thousands of antelope-skins are exported as cow-hides! This I have seen for myself. Formerly they used to be sent off quite openly and only tied up; nowadays they are covered with canvas mats. The same thing happens in East Africa with smaller animals—with the *pelêle*, for instance, and the Bega monkey.

While those regions of the north of Africa which adjoin the Mediterranean possess a species of wild boar similar to our own in form, we find south of the Sahara quite another kind distributed over a wide area.

In the Masai country a singularly unpleasing kind is found—the wart-hog, whose name suggests that it is not very beautiful! It has a head covered all over with warts and protuberances that give it a very grotesque and ugly appearance.

A second species, the river-hog, is found more in the neighbourhood of populous districts, and for this reason I seldom came across it. The wart-hog, however,

C. G. Schillings, phot.

OUR CAMP AT SUNSET—TAKEN WITH AN ORTHOCHROMATIC PLATE (GERUTZ)

is frequently found in the Kilimanjaro region, and the big old boars afford the hunter good sport as well as fine trophies with tremendous tusks.

Wild boars are very harmful in Africa, as everywhere else, in the plantations and fields, and are particularly hard to keep off the native plantations at night time. But the wart-hog is enabled, by its powerfully developed tusks, to wander over the unpeopled velt, and to find itself food by grubbing and ferreting. It is fond of flesh when it can find any.

Swine are endowed with very fine senses of hearing and smelling, but their sight is very weak. Big old boars have a deceptive resemblance to male lions when taking flight, on account of their mane, especially in the tall grass and with a bad light. More than once my carriers alarmed me with the cry that they had seen a lion taking flight when it was really a boar.

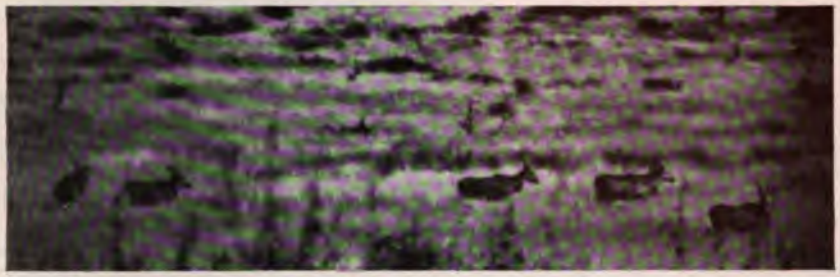
One peculiarity of the wart-hog is that it frequently stays in the haunts of the ant-bear, especially during a period of great heat. One often finds several at a time in these burrows.

Wounded wart-hogs strike hard with their tusks, and great caution is necessary in hunting them. Owing to their uniformly grey colouring they are almost indistinguishable from the ground of the velt. Sometimes, even in the midst of thick cover, they burrow right under the ground.

The wild boar will survive longer than most other members of the East African fauna, in spite of its being hunted. Even in the over-populated Germany of to-day

there are plenty of black wild boars. In the fever-haunted countries of East Africa they may yet dwell for many a century.

Since the above lines were written, it appears that a hitherto unknown species of wild boar has been discovered —somewhat intermediate between a wart-hog and a river-hog.



ELANDS

CHAPTER XXIII

Hyænas and Jackals

WHILE the striped hyæna is rarely to be seen and is notable for its timidity, the spotted hyæna is to be met with all over East Africa. In conjunction with the vultures and marabous, they act as scavengers. They rarely leave a mammal of any size to rot. Wherever there is a dead body, whether it be of man or beast, the hyæna is always to the fore.

The animal-world of Africa is spread over immense areas, and the animals vary their haunts, much as do the nomadic races, according to the seasons. Thus it is that hyænas are to be found now in one region, now in another. They congregate in great numbers wherever there is a famine, whether it be the result of drought or of war. The larger beasts of prey—lions and leopards, for instance—provide a large proportion of the hyæna's food. The hyæna's keen scent draws him quickly to the spot where the huge cats have left the remains of their prey.

Hyænas make away with even the largest carcases at an extraordinary rate; they can swallow immense

quantities of flesh and bones, and can break bones of great thickness with their powerful teeth. Their habits are nocturnal. They do not like the heat of the sun; young and tamed specimens are not able to stay with the caravan on the sun-scorched velt, even when they are full grown. When the sky is cloudy one sometimes sees hyænas in search of prey in the late

VULTURES REMAINED NEAR THE CAMP DAY AFTER DAY IN THE HOPE OF FOOD

afternoon, but generally they pass their day in the shade of the bushes or in caves and under rocks. I found young ones on several occasions during the spring months. There are generally three or four in a litter.

The vicinity of the fox-like earths is trodden quite flat by the young ones. Quantities of skulls and bones lie round about, and vultures sit close to the young hyænas in the early morning hours—a sign that they

C. G. Schillings, phot.

A BLACK-BACKED JACKAL DISTURBED BY THE FLASHLIGHT WHILE DRINKING

C. G. Schillings, phot.

pass the night on the trees close to the earth. I have often found a number of cinereous vultures, griffon-vultures, and king-vultures forming an amicable addition to the household of the young and old hyænas.

During the day, too, I have often seen hyænas tearing away at carcases, undisturbed by the hundreds of vultures, marabous, and jackals all around. None of these three species had any fear of the others. All were engrossed in satisfying their hunger as fast as possible. The jackals as well as the hyænas like to bury themselves in the stomachs of the larger mammals. As darkness drew nigh, the hyænas would surround the camp, howling dismally; they were not in the least afraid of visiting our premises by night to steal flesh, or even unappetising morsels such as skins or pieces of leather.

The photographs I took by night show the greed with which hyænas pounce on a carcase. Their strength is astonishing. A spotted hyæna can easily run off with an ass, as the reader will see for himself from the accompanying illustration. Böhm saw them steal a human corpse and gallop off with it.

I found the hyænas timid and cautious when I tried to photograph them feeding by night. As Böhm remarks, they keep at a distance so long as the hunter is within range, but the moment he goes out of sight, if only for a few moments, the hyænas are back again at the carcase. They are never taken by surprise, being possessed of very sensitive nostrils.

Young hyænas are distinctly marked; when old they lose their marks more or less, and their colouring becomes

more uniform. They are often mangy. During the famine-year, when hyænas feasted upon human corpses, I killed some very fat specimens.

Like the European fox, the hyæna—the "fissi" of the Waswahili, "twiti" of the Wanyamivesi, "ol egodjine" of the Masai, an "arvijét" of the Wandorobo—adapts itself to different localities and different conditions. Sometimes they are very shy, sometimes extraordinarily impudent. In some regions they are satisfied with carrion, in others they seem to crave for cattle and human flesh. They seized a number of my donkeys. One has most to fear from their attacks on dark, rainy nights.

The reader may be surprised to hear that until 1899 one of the most disputed questions with regard to the fauna of British and German East Africa was whether there was such a thing in existence as a striped hyæna. Professor Matschie long held the opinion, for want of proof to the contrary, that either the aard-wolf (*Proteles cristatus*) was the only species to be found in these countries, or that if there was a striped species of hyæna to be met with it must be one new to zoology.[1]

There had been other conjectures as to the existence of the striped species, but proof was not forthcoming to such distinguished observers as Richard Böhm, Hunter, and others. Captain Waldemar Werter believed he had found a striped hyæna, but there was a doubt as to whether he had confused what he saw with the aard-wolf. Personally, I believe he did actually see a striped hyæna.

[1] Paul Matschie, *The Mammals of German East Africa.*

C. G. Schillings, phot.

A STRIPED HYÆNA

Hyænas and Jackals

Oscar Neumann's stay of nearly three years in German and British East Africa seemed to have finally established the fact that only the spotted hyæna was to be found in those regions. He stated, however, that, according to the natives, a beast of prey similar to the hyæna was to be found in pairs, and lived on the coast and ate fish.

In the autumn of 1896 I baited a trap one evening with a heron on the banks of Lake Natron, between Kilimanjaro and Victoria Nyanza. Next morning I found a striped hyæna in the trap. Alfred Kaiser, who was well acquainted with the species on account of his four years' sojourn on Sinai, declared this animal to be identical with the one he knew in Arabia. This seemed to dispose of the idea of confusion with the aard-wolf, but the slight differences between this specimen and the striped hyæna already known were not to be discerned without adequate materials for comparison.

The information I had so far collected still left doubts in the minds of experts; unfortunately I could not back up my theory by scientific proofs. These were still to seek, and could not be found in British East Africa, even by such keen observers as F. G. Jackson, A. H. Neumann, Lord Delamere, and others. This was reserved for the great journey through Masai-land which I undertook for collecting purposes in the spring of 1899.

By setting traps for hyænas systematically I was able to procure sixty-six skins and skulls, as well as entire skeletons. Now, at last, all doubt was at an end! A letter from Professor Matschie informed me that a spotted

species named the *Hyæna schillingsi* had been definitely included in the category of the animal species of East Africa known to science.

What I now state clearly proves the tremendous difficulty of the investigation of an unknown fauna. You would say that such a common beast of prey as the hyæna would have come into constant contact with the sportsman, or even the non-sportsman, especially by nightly ravages, and that, above all, the natives would have known it well.

In the same way so distinguished an observer as Stuhlmann was unable, during his stay on the Semliki, to obtain information of the okapi, which later became so famous, or of certain antelopes, as, for example, Hunter's hartebeest (*Damaliscus hunteri*) or the bongo (*Böocercus euryceros*), which had been seen by Europeans not long before.

Of course, after my absolute proofs and those given by Professor Matschie, it was constantly stated by this or that person that they had long been acquainted with the animal in question. Such statements are easily made!

In an English work, *Great and Small Game of Africa*, published in 1899, the striped hyæna is said to be found only in Somaliland.

The great whale-head (*Balæniceps rex*), which has become so celebrated, was for years after its discovery in the marshes of the Nile the unattainable desire of ornithological collectors!

How seldom does the European spy out a fox in passing through woods and fields! How proud I was in my younger days in the Eifel Mountains at home over having

BLACK-BACKED JACKALS (*THOUS SCHMIDTI*)

C. G. Schillings, phot.

JACKAL MAKING OFF WITH THE LEG OF AN ANTELOPE

seen the wild cat on six occasions, and having killed three specimens!

Although I have made four sojourns in East Africa, only once have I seen the striped hyæna by day. At night I have noticed it twice, and I have trapped it 121 times. All natives who are at all acquainted with the animal world know the "kingugua" well. If you show them one that has been trapped they recognise it at once; but if you question them about it, though its appearance is so distinctive and easily recognised, you are confronted with the most astonishing ignorance and that lack of desire to know which is a trait of the natives of East Africa.

The "kingugua" is much more feared than the spotted hyæna; it is said to be much more rapacious and aggressive. I cannot say how this may be. Perhaps the very wildness of the animal has been the cause of unjust suspicions with regard to its savage nature. I know that on several occasions the natives laid the blame of certain cattle ravages and fatalities on "my hyæna" when leopards were unquestionably the real culprits!

In captivity both striped and spotted hyænas are very confiding. In the Berlin Zoological Gardens I can call one away from its meal of flesh! The animal prefers a caress to the satisfaction of its hunger.

In 1902 I managed with great trouble to bring home to Europe in an iron cage a hyæna (*H. schillingsi*), caught in the Lafitti Mountains. It is still living. Its transport to the coast on the shoulders of forty coolies would never have been carried out but for the energy of my most

excellent attendant, Ombasha Ramadan, for I was very ill at the time.

I have established the fact that the striped hyæna is as commonly found as the spotted hyæna in some districts. In these cases the animals were much less rapacious than their spotted cousins. When caught in traps they always tried to hide their heads by pressing them against the earth in a very curious manner, as if playing at being ostriches—very different from the behaviour of the spotted hyæna, which snarls and struggles.

Whilst following the course of the Pangani River, in the Kilimanjaro district, on Meru Mountain, Ngaptuk, Dönje-Erok, the Njiri marshes, in the Matiom Mountains, by the Kibaya-Masai, Lake Natron, the Kitumbin, Gileï, and Donje l'Eng-ai volcanoes on Lake Natron, in Ukambani, in the Pare Mountains, and in the districts watered by the Umba River—everywhere I have found the striped hyæna,[1] and sometimes twice as often as the spotted hyæna.

Ubiquitous throughout the desert are the jackals, whose habits are chiefly, but not entirely, nocturnal.

The beautifully coloured silver-jackal is common everywhere; but I found a second and larger species in the hilly districts (*Canis holubi*).

At night time silence reigns over the velt but for the howling of the hyænas and the plaintive cry of the jackals, which are still on the move in the early morning hours after the hyænas have sought their hiding-places.

[1] I had the pleasure of presenting a specimen of my hyæna to the British Museum.

C. G. Schillings, phot.

A "FISSI" TRYING TO DRAG AWAY THE CARCASE OF AN ASS

There is the greatest companionship between jackals and

REMAINS OF ONE OF THE MANY RHINOCEROSES SHOT BY THE "FUNDI"

hyænas, and sometimes jackals are at their ease in the company of the lion ; but lions, and leopards also, are apt to

prey upon them. I have found the fresh remains of jackals lying about after the lion's feeding-time. A too bold companion of the monarch had evidently fallen a victim to his venturesomeness.

Generally speaking, however, jackals roam about the velt alone in search of their food, the steady breezes of equatorial Africa helping them to scent out a carcase at an immense distance.

If I laid out a bait in a certain place, it was sure not to be very long before one or more jackals came peering very cautiously out of the darkness.

Nothing gives a more vivid impression of the quickly changing life in the equatorial velt than the rapid decomposition of the gigantic carcase of an elephant. One day the great beast lies before us in all its huge size; the next its body is changed out of all recognition. And the hyænas and jackals will have already made their raid in the night. Hundreds of vultures will have settled on the neighbouring trees, or have begun to feast on the carcase. Round about the grass is trodden under, and all whitened with their droppings. During the following night almost the whole of the gigantic carcase will have been consumed by the united forces of the hyænas and jackals. It is in the early morning hours that the vultures are most busy. In a very short time nothing remains but the scabby hide and the huge skeleton.

The next rainy season softens the remains of the hide, so that it can be consumed entirely by hyænas and jackals. Now only the broken bones remain on the ground. A velt conflagration, perhaps, and the gradual

C. G. Schillings, phot.

A SPOTTED HYÆNA FEEDING ON THE CARCASE OF A MULE

C. G. Schillings, phot.

influence of the tropical sun soften the bones, and they fall to bits; the tusks alone withstand the influence of the weather for a number of years. Then new life always springs from the ruins. I have discovered birds' nests in the huge bleached skulls, or perhaps carefully built nests of mice that had found a refuge from their enemies in the tusk-sockets. Then, in the course of a few years, the skull also falls to pieces; and thus ends the drama which has been played. . . .

One often encounters jackals by daylight. Their ubiquity makes them play a great *rôle* in the legends and tales of the velt-population. In Germany the fox is the poetical personification of cunning and practical acuteness in the fight for life. In East Africa this *rôle* is played by the "umbua witu" of the Waswahili, the "endéré" of the Masai, or "eéloandé" of the Wandorobo.

The opportunities I had of watching a large carcase beset by hundreds of vultures, innumerable marabous, some spotted hyænas, and a number of jackals, all clamouring for the booty, were among the most interesting of my African experiences. Unfortunately, bad light generally stood in the way of successful photographs at these times. By some sort of fatality the light was generally bad when I wanted it most. I trust that others may be more lucky in this respect. I hope that the man who follows in my footsteps will succeed far better than I have done. It is not enough to be keen and expert and well-equipped; one must have good luck as well.

ELAND - FRINGE-EARED ORYX

XXIV

The Antelopes of East Africa

LUDWIG HECK lays it down in his book *Das Tierreich*, that the word "antelope" embraces all horned animals except goats, sheep, and cattle. We may safely apply it, therefore, to most of the different kinds of ruminants met with on the East African plains. Amongst the various species there are two that are notable for their size and strength; these are the greater kudu (*Strepsiceros strepsiceros*) which the Masai call "ormalu"; and the eland (*Taurotragus livingstonei*) called by the Masai "o'ssirwa," and by the natives of the coast "mpofu." The kudu, the males of which carry larger and stronger horns than any other African antelope, dwells in mountainous districts, and seldom makes its way into the Masai country. In Unyamwesi it is frequently to be met with, and I possess a pair of huge horns—"record" horns—which were stated to have come from the Useguha hinterland.

According to Oscar Neumann the kudu was to be found among the Pare Mountains in 1893, though

not in great numbers. In 1899 I made a journey from the Pangani River to the Pare Mountain range, and encamped at the foot of the middle hill in order to stalk these antelopes. I found them very scanty in numbers, and very wild upon the slopes of the hill, which was covered with the candelabra-euphorbia trees. It was only after several unsuccessful attempts that I succeeded

ALL MY ATTEMPTS AT GETTING A GOOD PHOTOGRAPH OF A LESSER KUDU WERE FRUITLESS

in coming upon a small herd of four kudus, including one buck, which I brought down. During the daytime the kudus conceal themselves under the euphorbia-trees upon the spurs of the hill, and it was only very early in the morning that I got a sight of them grazing on the glades over which they roamed.

It was in the early spring, the hottest time of the year, and the hillsides were scorched and bare. Here

and there light showers of rain had brought out patches of new grass and new leaves upon the trees, and these the kudus sought out. The blazing sunlight, the rough and stony ground, and the thorny vegetation make the stalking of the animals a very difficult job. I was sorry to find muzzle-loaders in the huts of all the natives. They had been hunting this valuable prey until it had been almost exterminated.

I have never seen the greater kudu in the Masai country, except in the neighbourhood of the Gileï volcano. It must, however, appear sometimes in the steep declivity going down towards the Natron Lake—"the great ditch," as it is called—as the natives of Nguruman possess numerous signalling-horns made out of the horns of these animals. In the south of German East Africa also the greater kudu would seem to be numerous; a well-known officer in our colonial police brought me to the Coast a great number of kudu-horns secured by Askaris in the Tabora neighbourhood.

My experience of the greater kudu was comparatively slight, but I was glad to come across great numbers of the much weaker species called the lesser kudu (*Strepsiceros imberbis*). This wonderful little animal is sometimes to be seen in the Masai country, but only here and there and in small numbers. The Masai gave them the name "o'ssiram," while the Wandorobo designate them "njaigo."

The beautiful white-maned, dark-skinned bucks and the hornless does, whose skins are of a still darker brown, present a wonderful picture when you come upon

them suddenly. The white stripes upon their bodies have the effect of making them part and parcel of their environment, as is the case with zebras ; they produce the illusion of rays of the sun falling through twigs and branches. The extraordinarily large and sensitive ears of these animals enable them to become aware of the slightest suspicious noise. There is something very dignified and imposing

A HERD OF ELANDS

in the demeanour of the bucks, especially when they raise their heads for a moment at the hunter's approach.

Formerly the lesser kudu must have been as numerous on the East Njiri swamps as in other parts of Masai-Nyika. The Masai still call them sometimes "ngare o'ssiram" (ngare-water), but their numbers were unfortunately thinned by the rinderpest. My friend Mr. Hobley found a great number of bodies of lesser kudus

in British East Africa which had succumbed to this terrible plague in 1891, as Mr. F. G. Jackson records in the Badminton Library.

Lesser Rudus are to be found in small herds, consisting of a single buck and a few females. During the day they rest, going out to graze in the morning and in the evening. Often they will allow you to come right up to them, and then, taking to flight, make off at a tremendous pace, and you will never see them again. I spent a long time trying to get a good picture of these antelopes, but the only good one which I took was spoilt through a succession of mishaps. As they generally take up their stand in the shade of the trees and bushes, and are seldom to be seen out in the sun, it is very difficult to photograph them. On one occasion, when I came upon a fine specimen of a lesser kudu buck raising his head proudly about eighty paces away from me, my hand shook, and the picture which I took with my telephoto-lens was spoilt. The kudu which made its appearance upon the negative presented only a very blurred resemblance to the original.

I found that the horns of the old bucks were very much broken and decayed; you would think they had been lying out for quite a long time on the desert when found. The lesser kudu very often falls a victim to leopards; I have seen bits of them hanging upon trees. In the driest seasons kudus feed largely upon "bowstring" hemp; I have sometimes found their stomachs completely filled with the long fibres of these plants.

The largest and most powerful antelope of all in Africa, the eland (*Taurotragus livingstonei*), has something

of the appearance of cattle in its shape and bearing. This is especially the case with the bulls of larger size, sometimes weighing as much as 2,000 pounds, and with neck and shoulders strongly developed. I found that while the females were always striped, the old bulls sometimes lost their stripes altogether; and, while I never noticed anything exceptional about the horns of the bulls,

WOUNDED BULL GNU

those of the cows varied greatly in length and shape, sometimes being all twisted, sometimes quite flat.

It was long believed that these elands, like the buffaloes, had been practically exterminated by the rinderpest. I am glad to say that I found this was not the case. I found the biggest herd of all in the Kikuyu country; it was a herd of forty-seven head, and I saw them grazing upon the bare-looking plain in company

with a lot of ostriches, but I could not get near them. It was by the Natron Lake that I brought down my first eland. I killed two others near Kibwezi, on British territory. Since then I have come across hundreds of solitary bulls in the autumn, and herds of various sizes, made up both of bulls and females, at all times of the year.

The eland is a wonderful hill-climber. Hans Meyer and Captain Merker have seen them at a height of 16,000 or 17,000 feet on the plateau of Kilimanjaro. Professor Meyer is of the opinion that they form a separate species of mountain antelope, living always on the heights and entirely avoiding the plains; but until he can support this theory by specimens distinguishable from those which I have met with upon the plain, I must disagree with him on this point.

According to my observations the eland, like so many other African mammals, leads a wandering life, moving about from place to place according to the season, and only ascending the mountains during the dry season; they keep moving about over a tremendous expanse of country, seeking out fresh grazing-places, and are often to be met with right on the coast of the Indian Ocean, in the Lamu-Witu country.

Bull Elands sometimes attain a weight approaching to that of a large ox, and the largest specimens are sometimes as much as five feet in height.

It is an exciting moment for the hunter when he comes in sight of these animals for the first time. At the approach of danger the "singoita," as the Wandorobo call the eland, keep closely together from the different parts

C. G. Schillings phot.

of the plain where they are grazing; then, taking to flight, they break at first into a trot, which develops presently into a heavy but rapid gallop. Before they actually make off, however, they always indulge in a series of high jumps, to the astonishment of the observer, who would not believe them capable of such agility.

I often found these elands at a great distance from water They are able to go without water for several days; they do not feed exclusively upon grass, but also upon stalks and the small branches of trees, but their favourite grazing is upon the slopes of certain hills. Although I knew that elands were hill-climbers, I was quite startled the first time I saw them just as they were starting up the side of a mountain. The spot where I saw them was 6,000 or 7,000 feet high, in the thick of an impenetrable jungle, made up of jessamine, vernonia, and smilax thickets. I came upon them again, afterwards, up above the forest-belt, in the region of the shrubs.

I often found them on the grass-covered open glades which the rhinoceroses have a liking for also, as well as in the dense woods high up on the different hills of the Masai country at altitudes varying from 7,000 to 8,000 feet.

As at this time I rarely found them upon the plains, I have come to the conclusion, as I have said already, that they resort to the hills in the dry season. I saw some quite young ones in the month of November; in most cases the elands did not mix with other antelopes, and the very old bulls were almost always alone. So far as I could judge, they did not seem at all nervous; even the bulls that had been shot at did not seem to stand on their guard.

Their horns were in some cases shattered in quite a remarkable way, whether through knocking up against the trunks of the trees or through fights with other bulls, I cannot say. While the white stripes are very clearly marked in the case of the young animals, they become less and less marked with age, and are barely perceptible on the old bulls; these bulls become darker and darker, until at last their skins get to be a sort of bluish-black.

The flesh of elands, especially of the young animal during the rainy season, is regarded as among the greatest delicacies in those regions. The skins of the bulls entail very troublesome preparation, as they are infested by a peculiar kind of tick, especially about the neck, and are very apt to go bad.

Another very notable type of African antelope is to be found in the gnus, the "njumbo porrini" of the Waswahili, the "aingat" of the Masai, and the "ngaita" of the Wandorobo.

If the white-tailed gnu (*Connochætes gnu*), now surviving only in those regions of South Africa—the country of its origin—in which it is preserved, is more bizarre, and has its characteristics more strongly marked, than either the brindled gnu or the white-bearded gnu, the latter can be claimed at least as a very distinctive feature of the fauna of the Masai region and the salt district. Bigger and stronger than the South African gnu, its appearance is much more like that of a buffalo, especially when seen from afar. The first sight of a bull gnu, as it moves along in its trustful, untroubled way, almost always gives the European the idea that he is face

C. G. Schidings, phot.

AFTER GOING THROUGH A VARIETY OF EVOLUTIONS, THESE GNUS FACED ME FOR A MOMENT THUS, EYEING ME QUESTIONINGLY, AND THEN TOOK TO FLIGHT

A HERD OF GNUS

WHITE-BEARDED GNUS

to face with a buffalo, unless he has come across the African buffalo in its native wilds.

At the time of my first journey the question was still undecided what kind of gnus were to be found in the Masai country; we know now that only the white-bearded gnu flourishes there. It wanders about all over the place, according to the rains, is very gregarious, and is almost always to be found in company with zebras, ostriches, and other animals. For weeks together I have watched a curious trio, consisting of an old bull gnu, a female gerenuk-gazelle, and a male Thomson's gazelle, and succeeded once in photographing them.

Gnus, like zebras, are often able to go for a long time with water containing salt, which other animals cannot drink; in the dry season they are to be found for months together in the neighbourhood of the Natron Lakes, where they graze upon the short new grass which springs up when the lakes periodically go dry.

It is not difficult to get within shooting distance of these gnus in regions where they have not yet been hunted by Europeans; the old bulls allow the hunter to come within two hundred paces, even on quite open spaces, before they take to flight (the herds being several hundred paces further away), so it is not hard to bring them down.

Very old bulls keep apart from the herd, either alone or in twos and threes. These very old animals are found sometimes with the hair on their heads almost entirely white. When the gnus get wind of the hunter they begin snorting and go through extraordinary evolutions, springing about continually in all kinds of ways before taking to flight. They are apt to go through these antics

C. G. Schillings, phot.

A BULL GNU PAUSING A MOMENT TO LISTEN ANXIOUSLY BEFORE BEGINNING TO DRINK. THE FOREHEAD, EYES, AND MUZZLE CAME OUT QUITE BLACK IN THE PHOTOGRAPH

sometimes in captivity. This habit of theirs is not to be ascribed to the irritation caused by the parasites from which, like so many other antelopes, they suffer. The specimens which I have brought to Europe have played and gambolled about in this way, and an examination of their bodies after death showed that they were completely free from these parasites. I myself have discovered a species of parasite which seems very common on the white-bearded gnus, and which has not yet been given any scientific designation.

All keepers of Zoological Gardens are familiar with the way these gnus jump about. The South African gnu is most conspicuous of all in this respect—it is a characteristic not to be found amongst other ruminating animals. J. G. Millais has given us an excellent picture of the white-tailed gnu indulging in these gambols. This leaping habit is connected to a great extent with the fights that frequently take place between the bulls.

Gnus, as was found out in the early days in Cape Colony, are to be classed among those animals which it is not easy to overtake on horseback, their powers of endurance and vitality being remarkable. In its free state the gnu always shows itself nervous in the presence of man. If it were to make use of its strength and its formidable horns, it would doubtless prove as dangerous, if not more dangerous, than the buffalo, especially as it has very good sight. It only shows its temper in captivity, when it is a more dangerous animal to deal with than most other antelopes.

I was fortunate enough to be able to bring living

white-eared gnus to Europe in the year 1900 for the first time. Through the friendly offices of Captain Merker I succeeded in East East Africa in getting hold of two bulls and a cow aged about two years. In the company of two boys these gnus followed my caravan to the coast and I succeeded in getting them safely to Germany. It was not easy to get them across the river: they had to be driven over by force and manœuvred across with the help of ropes. One of the bulls I presented to the Berlin Zoological Gardens and it was my hope to use the other two animals for breeding purposes.

They used at first to run about quite freely over the paddock in Wellheim. I had had the dagger-like horns of the bull somewhat shortened on taking him out of the cage in which we had brought him over, and which I had fashioned, with the help of my taxidermist, out of some old fencing-wood that we had bought at Pangani. A well-known horse-trainer willingly took charge of these queer strangers. Judging them naturally from a utilitarian point of view, he exclaimed: "These are good little beasts," but he very soon changed his mind as to the character of the animals. One day he absolutely refused to go within the enclosure in which his charges were kept, which was part of his duties. "I'll never call them good little beasts again," he said. "They are devils. The wife is good enough, but the husband is the very devil himself."

I had been away for several days, but I thought now I would deal with the animals myself. Armed with a long whip I undertook to drive back the bull, which was

C. G. Schillings, phot.

ZEBRAS AND GNUS

disposed to make a rush at me. In a moment I was hurled several feet into the air. It was only by a miracle that I escaped very serious injury, if not death. It took three or four active men, armed like myself, with whips, to drive the beasts off. In a week, however, the bull began to show its contempt for even the heaviest whips, and at last it had to be enclosed with its companion in a smaller piece of ground, fenced in with strong stakes. Its temper gradually got worse there, and at last it became astonishingly wild. The bull in the Zoological Gardens behaved in a very similar way. A short time afterwards all three animals died of tuberculosis. Hitherto no other white-bearded gnus have, I think, been brought to Europe, but it is to be hoped that this will be achieved later.

Gnus are fonder than any other antelope of the open velt, upon which they are usually to be found. Before us there spreads, in the burning sunlight, the vast extent of the bright-hued, reddish, glimmering laterite soil; and hundreds of animals, thronging together, enliven its arid stretches with colours that vary in the varying lights. When the oft-seen *mirage* rises from the plain in the midday glow—giving the illusion of bluish water-surfaces—the gnus and zebras look as if they were moving about in water. About midday isolated groups of gnus take their siesta under the scattered, meagre thorn-bushes of *Salvadora persica* and other trees; but during the rest of the day the herds are to be seen dispersed over the plain.

It is very evident that here, as everywhere, life in the

animal world has its underlying recognised law; for the young males in this herd of gnus are plainly united—those who are in their prime, that is—in fighting off the old bulls and keeping them away from the herd. The old bulls remain like scouts, some hundred paces from the rest. In the famine years of 1899–1900 I was often able to get a bird's-eye view of a kind of serious "war-game" going on between the gnus and the natives, in the dust-swept desert between Kilimanjaro and the Meru Mountains. But no matter how the natives, making use of every inch of covert, tried to approach the herd of gnus, the latter were always able to evade their enemies; for they were warned by their scouts, the old bulls, who flanked the herd everywhere.

In those parts of the velt through which the British Uganda railway takes the traveller to Victoria Nyanza, one often sees large herds of gnus and many other antelopes close to the permanent way. The British authorities have succeeded, by means of very strict regulations, in creating a game-preserve here, in the middle of the great trade-track. The authorities carried out this scheme with iron resolution, and the first transgressor of the regulations—a highly placed English official—was, according to general belief, mulcted in very heavy damages. Such a thoroughly practical mode of procedure is worthy of all acknowledgment in a district where *control is possible*. It differs considerably from our "Game Protection System"—a system of regulations which may certainly be promulgated, but which cannot be carried out in the far-distant parts of the velt,

C. G. Schillings, phot.

A PAIR OF WHITE-BEARDED GNUS IN THE ENCLOSURE AT WEIHERHOF GÜRZENICH. BEHIND ARE PROFESSOR P. MATSCHIE, MR. KERZ, AND DR. LUDWIG HECK

while in the proximity of the stations the game is extirpated.

The wild-animal fauna, which I was there enabled to investigate long before a railroad connected the Indian Ocean with the largest of Central African lakes, has thus been for the most part kept intact, and gives a plain indication of what may be accomplished also in the

FRINGE-EARED ORYX

proximity of the projected railways in German East Africa by means of the same judicious administration.

Besides the three species already mentioned, some giants of the antelope kind inhabit many parts of German East Africa. These are the large roan and sable antelopes (*Hippotragus equinus* and *Hippotragus niger*), both called by the Waswahili "palla halla." O. Neumann has pointed out a third species in the South Masai country. In the

Masai highlands proper the first kind is not to be found; on the contrary, a strip of coast-line, stretching barely one hundred kilometres inland, along the Mombasa-Tanga-Pangani-Sadaani boundary, is the chief habitat of this splendid antelope. We find kindred types in the south of the country, in riverless districts. I have found quantities of fresh horns among the dealers in Zanzibar, all, according to their account, coming from German territory; and, more authentically, it seems to be established by the experiences of various travellers, that the sable antelope does not seldom occur in the coast districts. In the Kilimanjaro country the "palla halla" is entirely missing. It was in the Ngare-Dobash district that I first saw the kindred roan antelope (*Hippotragus equinus*), which, later on, I had again the opportunity of observing not far from the Kikumbulia provinces.

I do not believe it is the case that the hartebeest was to be found in the Kilimanjaro country before the time of the rinderpest; at any rate, it can only have occurred there in very small numbers.

To obtain photographs of these glorious roan antelopes in their native freedom would be an enterprise worthy of any amount of endurance. Unfortunately I was not able to undertake it.

But, in compensation, I cannot say how many times I came upon a type as beautiful as it is timid—the fringe-eared oryx (*Oryx callotis*), which inhabits chiefly the driest parts of the desert, as far as possible from water. This type, numerously represented in Africa and Arabia, reaches its highest development in the gemsbok (*Oryx*

C. G. Schillings, phot.

FRINGE-EARED ORYX

GRANT'S GAZELLES

gazella) of the Cape, an animal which, according to the latest reports from German South-West Africa, has been decimated within recent years. In this species, moreover, the splendid horns are at their finest and longest. These horns are always stronger, compacter, and shorter in the males than in the females. A cow which I killed in 1900 had only one horn; the other had been broken off. This antelope reminded me curiously of the English heraldic animal, the unicorn. The prevailing species of oryx in German East Africa is the tuft-eared kind. This antelope is known to the Waswahili under the name of "chiroa," to the Masai as "ol' gamassarok," and to the Wandorobo as "songori." In the rainy season these big antelopes are extraordinarily fat.

Before I hunted oryx in the Masai country, little was known of them there; but I found them extremely numerous, living in herds of as many as sixty, but more often in smaller groups, and, as with most antelopes, the old big bucks isolated. Their coloration, which matches that of the velt most wonderfully, and their peculiar habit of living far away in solitary places, are the causes of the comparatively rare observation and destruction of them by Europeans. And even such a distinguished hunter as F. C. Selous spent, as I am told, several fruitless weeks, some years ago, trying to bag the "chiroa" in British East Africa.

These antelopes often live for weeks at a time away from any water, the night-dew and the water-retaining plants sometimes being sufficient for them. It is only at the height of the dry season that they go to the water.

Extraordinarily short and thick-set in appearance, these antelopes are possessed of desperately dangerous weapons in their horns, so that they have nothing whatever to fear, even from leopards.

They care as little for the mountains as the gnu does—and, indeed, are essentially animals of the plains. Of a timid disposition, they avoid inhabited regions as far as possible. I found quite matured calves in December. Their mothers cleverly keep the rest of the herd at a distance from themselves and the youngsters, as I once was able to observe, when the handsome creatures are playing a kind of war-game with each other, in which the isolated animals parry the playful thrusts of their comrades with their pointed and formidable horns. Like the gnus, they show a marked partiality for the society of zebras. Quite often I found these oryx, especially solitary bulls, resting in the daytime on little open spaces in the midst of spreading sueda-bushes.

All the oryx are likewise among the toughest of wild animals; only a very well-placed shot will dispose of one of them.

The beautiful gemsbok has never, so far as I know, reached Europe alive.

Antler-bearing ruminating animals are entirely unknown in Africa, with the sole exception of two species of deer at the extreme north of the continent. Some kinds of waterbuck (*Cobus*) are strikingly like the deer tribe in their habits, demeanour, and general conduct, the females especially bearing a marked resemblance to the red-deer. The male water-bucks carry a stately head-ornament

in the shape of lyre-shaped, curving horns. As a general rule I found the "curo" of the Waswahili in the proximity of water and marshy places; but it also goes right out into the velt, and during the dry season will even withdraw into the mountain-forests, finding good cover there, and protection from flies.

The scientific name of the waterbuck inhabiting

A FEMALE WATERBUCK

the Masai district is *Cobus ellipsiprymnus*; the Masai tongue gives it as "ol' emaingo," and the Wandorobo as "ndoi."

By the coast, waterbuck particularly delight in the proximity of the salt-water creeks. I found them extraordinarily numerous near marshy river-banks, where I often observed several hundred in one day. Like all antelopes, waterbuck divide themselves into herds of different sexes;

but one sometimes finds a few isolated bucks among the large herds of hinds. The waterbuck dearly loves an island in a river to which he can make his way by shallow channels unmolested by the fear of crocodiles. The waterbuck has a very peculiar smell, which is overpoweringly strong near its especial habitat, and can even be perceived at a great distance. This odour, which is something like that of tar, pervades the flesh of the animal, so that it is not much relished as food by Europeans.

The females are particularly timid and watchful, and always give the first signal for flight. The buck or bucks which happen to be with them always, on such occasions, form the rear-guard of the fugitive troop. The vitality and tenacity of these antelopes are as remarkable as in most African horn-bearing animals.

In the March of 1897 I went alone with a small caravan from Kilimanjaro to the coast, following the left bank of the Rufu. Amongst my tame cattle there was a black-and-white cow. Suddenly I noticed something black and white about two hundred paces in front of me, and supposed it was my cow which was being driven in front with the goats. But immediately afterwards I saw that it was a male ostrich, which had been taking a midday sand-bath, and was now running away from us. Scarcely an hour afterwards I saw, to my intense surprise (I was marching at this time in front of the caravan), something white glimmering again through the bushes. Amazed, I took the glasses to ascertain what it really was, when, to my delighted astonishment, the white "something" defined itself as a snow-white female water-

buck. But, most disappointingly, I missed it, owing to the great distance and my pardonable excitement.

I stayed three days at that place, vainly searching for the rare creature; I never saw it again. About a year later it was, I was informed, again fruitlessly chased by two Europeans at the same place.

Curiously enough, white waterbuck were not unknown

HARTEBEESTS SOMETIMES LOOK QUITE WHITE IN THE SUNLIGHT

to my old caravan-guide. Years ago he had seen "white game" (*Nyama nyaupe*) near the same spot, and so had the people who were then with him. The so-called hartebeest antelopes are widely represented by many different species throughout Africa. Despite the obvious family likeness always existing, they really differ a good deal in colouring, and especially in horn-formation.

My Wanyamwesi carriers called them "punju";

the coast-folk give them the name of "kongoni"; the Masai, "logoandi," and in the older idiom, "lojuludjula." I found "roboht" to be the Wandorobo name for them.

In the Masai desert region the "kongoni" of the coast-folk (*Bubalis cokei*) is found—a brown animal, and, like all hartebeests, remarkably top-heavy. It is a frequenter of the plains, where, once put to flight, it displays extraordinary staying power. If the old leader of a herd, whether a buck or a hind, be slain, it is not difficult to kill some other members of the party. This antelope, which at first sight is so quaint and ugly, can move over the uneven ground of the desert with wonderful agility. The legs, as hard as tempered steel, seem to carry the creature over the ground as if he flew on feathered pinions. In some cases the flight begins with a most characteristic trotting—a kind of *thrusting* trot, in which the fore-legs are thrown far forward.

If they are put to very hurried flight, they carry their heads very low and well in front of them. The vitality and tenacity of this wild animal—which feeds exclusively on grasses—are, in my opinion, superior to that of all other African antelopes. I have often had to follow old bucks, which had four or more mortal wounds, for a very long time before I could administer the finishing shot. The coat of this antelope sometimes, especially at night, looks of a shimmering whitish colour, as is strikingly shown in one of the illustrations to this book.

In open declivities, sparsely grown over with acacia salvadora and terminalia, as well as in the open plain, we find the "kongoni" specially frequent, often in company with ostriches, zebras, gnus, and Grant's gazelles or other wild animals. Young specimens of these antelopes, only a few days old, which I have come across, principally in March or April, scamper off just as nimbly

A FEMALE GERENUK GAZELLE

as their elders. One of these week-old creatures, which I was trying to tire out, was the principal cause (of course, in conjunction with severe malarial fever) of a painful heart-trouble, which brought my third African tour to a premature end.

To the hartebeests (as well as to many other species of antelope) are peculiar both the characteristic lachrymal glands and another kind of gland, of which

the particular character has not as yet, to my knowledge, been at all thoroughly investigated. These glands fulfil the purpose of secreting a certain scent, which makes it easier for the animals to find one another in the wilderness. This antelope does not offer any particular temptation to the sportsman, for its flat horns form no very coveted trophy. The hartebeests can live for a long time without water, and the remarkable power that many African ruminants have of existing with very little liquid food is thus again strikingly exemplified.

In the districts drained by the Victoria Nyanza I became acquainted, some years ago, with two other beautiful species of hartebeests—namely, the tiang (*Damaliscus jimela*) and Jackson's hartebeest (*Bubalis jacksoni*). In 1897 I also succeeded in shooting in British East Africa a type of hartebeest (*Bubalis neumanni*) which was then known by only two or three examples. At that time, alas! I had not conceived my plan of taking photographs of African wild beasts.

The beautiful and graceful impalla-antelope (the "swalla" of the caravan-carriers), the male specimens of which carry fine lyre-shaped, wide-spreading horns, is found in small groups, and also in large herds of as many as two hundred, about the bushy, thinly wooded districts, but never on the plain. The lovely wild creatures, if shot at, alter their course over and over again with great rapidity, so that they are continually meeting, passing, crossing one another—a vision of enchanting grace in the sun-drenched landscape! Agility, grace,

C. G. Schillings, phot.

KONGONI, OR COKE'S HARTEBEESTS

steely elasticity, wonderfully vigorous beauty—all are here combined in one small compass.

Timid and pretty, the impalla-antelopes are extremely cautious also, and the alarm-note of the bucks is heard as often by day as by night. I found young impalla-antelopes in December; their mothers remained near the large herd.

The impallas like particularly the freshly sprung young grass, and manage to discover this even from great distances. They frequently alter their habitat. During the driest part of the year they keep in the closest proximity to the streams and brooks, where they may always be found in the hollows where fresh grass is growing. The natives know this, so they burn little tracts of the velt in order that the young grass may spring up on them. The antelopes will come hurrying to these from afar, and many of the pretty creatures are shot in this way amongst the half-charred solanum-bushes upon the blackly burnt soil of the velt.

In the autumn of the year 1899 I observed, in the middle of a herd of about two hundred impallas, by the Mto-Nyaki at Kilimanjaro, a perfectly white female specimen. I succeeded, to my great delight, in killing this specimen, after much stalking, rendered especially difficult by the watchfulness and numbers of the others. The following-up was made laborious by the almost impenetrable "bowstring" hemp thickets which cover the low-lying land near this stream. It was only after the third bullet that I actually got hold of the longed-for animal, and then I saw that she was pregnant with a male young

one, which was absolutely normal in colour. The slain antelope was no true albino, but had normal-coloured eyes. A long time ago, according to report, a native hunter succeeded in killing a similar white antelope, which was brought to Europe.

A group set up for me by Robert Banzer at Oehringen (Würtemberg) shows this rare animal surprised by a black serval cat which I caught, and two other servals, and makes a most pleasing "contrast group" of my African spoils.

Of the number of species of bushbuck in Western Africa which are peculiarly well adapted for life in the marshes by reason of their fine, large, extraordinarily elongated hoofs, the handsome species known as *Tragelaphus masaicus*, called by the Waswahili, "mbawara," in Kumasi, "sarga," and by the Wakamba-men, "nsoia," is the only one forthcoming in Northern East Africa. This type, although confined to watery places, as is evident from the formation of the hoofs, is by no means a marsh-animal, but lives also in high-lying mountain-forests, and was limited, in its origin, to very well-defined covert-giving localities.

I found the bushbuck not only near the coast in jungly places, but also by rivers and on the mountains of the Masai country at two thousand feet high. This antelope, which utters a peculiar alarm-note, audible afar, often lets the hunter come quite close in the daytime, before it takes to flight, and goes in the early mornings and evenings to the clearings for food. Under every condition of its life it prefers a very close, upstanding bush as a resort.

C. G. Schillings, phot.

IN ADDITION TO THIS GREAT CONCOURSE OF ZEBRAS, GNUS, HARTEBEESTS, AND GAZELLES IN THE FOREGROUND, THERE WERE SEVERAL OSTRICHES AND A HERD OF GIRAFFES IN THE DISTANCE

The old bucks gradually lose the beautiful brown colouring and the white markings, and grow darker and darker as they increase in age. The natives maintain that this antelope, when wounded, sometimes shows itself aggressive and dangerous. I found sometimes that mortally wounded bushbucks uttered a deep moan like a roebuck. Some of the tribes disdain the bushbuck as food. In March, near Arusha Chini, I noticed these antelopes with tiny calves. On account of their very dense haunts, I unfortunately failed to obtain a useful negative.

An abundance of splendid antelope types entices the huntsman to delightful stalking expeditions in the Dark Continent. But unquestionably that most coveted trophy of the German sportsman, the *antlers of the chief stag of the herd*, is for ever denied him here! However, he is indemnified for this by the number of horn-bearing animals that he will find; and even in these days there are many marsh and desert trophies worth trying for; and there is no knowing but he may come upon some strange denizen of the primeval forest the very existence of which is unsuspected!

WILD ANIMALS AT A SALT-POOL

XXV

Gazelles and Dwarf Antelopes

THE two species of gazelles met with most frequently in Masai-Nyika are Grant's gazelle (*Gazella granti*) and Thomson's gazelle (*Gazella thomsoni*), the latter of which is very similar in colouring to the former, but much smaller.

The large and beautiful Grant's gazelle, whose bucks have wonderful tails and whose females have beautiful long horns, was discovered and made known in 1860 by Speke and Grant on their way to the Victoria Nyanza, then discovered by them. Thomson's gazelle (the "goilin" of the Masai) owes its discovery in 1883 to the English traveller of that name.

The stately Grant's gazelle is found everywhere in Masai-land in large herds, very seldom alone. Sometimes the herds are composed of only females or only bucks, sometimes of a number of females with only one or a few bucks.

In the summer months I often found single female Grant's gazelles on large grass-pastures, and I was then

sometimes able to light on their calves, which were hidden not far off. When these are sufficiently grown, the mother takes them with her to the herd. These gazelles shun the forest, but are found in the lighter brush-woods. They do not eat grass exclusively, but also leaves and some kinds of tree-fruits, especially the fruit of a large solanumart.

The horns of the bucks very often curve outwards in

GRANT'S GAZELLES

a remarkable way, but sometimes they are set quite close together. I found both kinds in the one district, and have made a large collection of the two. This species of antelope has one peculiarity—the way it doubles like the hare when chased. One notices this especially with regard to the females, which always take the lead in the flight, while the buck or bucks of the herd keep

to the rear. The bucks have a particularly solemn appearance as they slowly swerve round to eye one, holding their necks very stiffly under the great weight of their horns. The smaller females, however, are the embodiment of graceful motion itself, and know well how to circumvent the stratagems of the hunter.

During the spring months Grant's gazelle is much harassed by a species of parasite discovered by myself, and also by a new species of gadfly which I found on it. The larvæ of the first-mentioned parasite pierce through the skin of the animals, causing much pain; the effect is very bad on the venison. This gazelle is not dependent on water, and is often found far out on the velt a good distance from the watering-places.

I once came very near being done for by a female Grant's gazelle, furnished with a pair of stately horns with very sharp points. My friend Alfred Kaiser had taken a walk with me in the direction of the Meru Mountains on the occasion of my first visit to East Africa. We were resting close by a pitfall made by the natives, in which a rhinoceros had been captured the night before, when we suddenly noticed a solitary Grant's gazelle on a hill some distance off. Armed with my friend's rifle, with which I was unfamiliar, I got nearer to the gazelle, and took aim when about three hundred paces off, using a large-bore cartridge. The wounded gazelle immediately came running down the hill and made for me, bleating loudly. Her young was evidently hidden in the grass not far from where I stood. At first I could not believe my eyes; but at the last moment I

realised the seriousness of my situation, and managed to fire a second shot just in time, which made the animal turn a somersault but a few paces off. Had I not succeeded in this, it would undoubtedly have pierced me with its horns.

The smaller Thomson's gazelles dwell out upon the prairies. They seem to be found in the Masai country

GRANT'S GAZELLES

exclusively. They are not only much smaller than the Grant's gazelles, but also less beautiful, and far inferior in every way.

Thomson's gazelle has, I might say, something of the sheep about it. Those which have not previously been shot at allow you to get within about one hundred and twenty paces of them, and only then move slowly away. They show their stupidity in their whole bearing. They

feed exclusively on grass. Unlike the Grant's bucks, the bucks of Thomson's gazelle are sometimes found alone. They have, as a rule, very strong and long antlers, the points of which are sometimes very close together, and never curved far apart, as is the case with many Grant's gazelles. It is very noticeable that the female Thomson's gazelles—almost without exception—have crooked and ill-formed horns. One frequently comes across striking malformations. I have never found deformities among the horns of bucks. When these gazelles are taking to flight they carry themselves in a very stiff and straight manner. When in full flight, however, like the hartebeests, they keep the head low down, so that the whole body of the animal seems flat and outstretched. When trotting they hold their heads somewhat higher, this being true especially of the bucks.

One often sees Thomson's gazelles feeding contentedly among the herds of cows, and still more among the herds of goats belonging to the Masai. All kinds of game are confiding with the Masai people, who never consume the flesh of wild animals.

Sometimes I found bucks fighting so intently that I could almost touch them with my hands. These little gazelles have a peculiar characteristic that I have never seen mentioned by other authors. Wherever and whenever one may happen to sight them, they whisk their tails violently backwards and forwards, especially when they become suspicious of any one approaching them, or when they take to flight They can always be recognised by this whisking of the tail.

C. G. Schillings, phot.

GRANT'S GAZELLES

Now and again one finds them living amicably and sociably with other kinds of animals. For days I have observed a single buck in company with a female gerenuk gazelle and an old bull.

I have never noticed these dwarf gazelles on the left bank of the Pangani River, but have frequently found them elsewhere. Near Nakuro and Elmenteita Lake, in the British district, I have seen them in thousands. In August I found newly born calves, and at the same time very small embryos. The dwarf gazelles are a great ornament to the Salt and Natron districts in the far Nyika. It is to be hoped that the velt will long afford a refuge both to them and to the beautiful Grant's gazelle.

There are two other similar kinds of gazelle found in Africa, which are among the most remarkable of the species to be seen in these desert places. Imagine an extremely slender and graceful miniature horned giraffe, coloured a uniform brown, given to raising itself on its hind-legs like a goat, so as to eat the leaves of bushes and trees. The males are adorned with peculiarly shaped horns; the females are without. One kind, Clarke's gazelle (*Ammordorcas clarkei*), has so far only been found in quite confined portions of Somaliland. The other species, which is very similar, the gerenuk gazelle (*Lithocranius walleri*,), has a far more extensive range, and, according to my own observations, is to be found far away in the velt of German East Africa. This gazelle, known by the Waswahili under the name of njoggo-nyogga, by the Masai as nanjab, and the Wandorobo as moile, was first definitely located by me in

German East Africa in the year 1896. Both Count Teleki and Höhnel speak in their works of a long-necked gazelle which they had killed near the Pangani, whilst on their wonderful journey of discovery to the Rudolf and Stephanie lakes; but they give no other particulars. I am of opinion that they had found a gerenuk gazelle, a species unknown to them. It was in the neighbourhood of the Buiko, at the foot of the South Pare Mountains, at sunset, that I came suddenly upon one of these beautiful gazelles just as it was in the act of raising itself on its hind-legs to pluck the scanty leaves of a mimosa, for it was during the dry season. For a moment I imagined it to be a giraffe! However, I immediately saw my error. I knew the appearance of the gerenuk gazelle from pictures, and I joyfully thought to myself that I had here found a species of gazelle quite unsuspected in these parts. Great was my desire to get hold of the animal; but I failed, because of the uncertain evening light. I fired twice, but missed each time. Next morning, however, another European succeeded in killing a female of this species. Thus to my great joy my observations were confirmed, for great doubt had been expressed in the camp the evening before as to their accuracy. This was a most striking illustration of our superficial knowledge about East African animals.

Soon I was able to ascertain that the gerenuk gazelle is widely distributed and is frequently to be met with, but that it is game only for the skilful hunter. They lie in the midst of the thickest thorn-wildernesses far from the water. They can exist in waterless places, nourishing themselves

C. G. Schillings, phot.

GRANT'S GAZELLES IN THE HIGH GRASS

on twigs and leaves. These gerenuk gazelles are well off in the hungriest deserts in the midst of a vegetation consisting of *Euphorbia*, *Cissus quadrangularis*, *Sanseviera cylindrica*, *Sanseviera volksenii*, and shrub-acacias. I have found no confirmation of Hunter's theory that they live chiefly on dried grass in the neighbourhood of the rain-stream beds. Although these gazelles are very widely dis-

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tributed, they are confined to a quite distinct type of the velt flora, which is easier learnt by experience than described. They are found not infrequently on the broad acacia-covered plains, and also in hilly districts; but they shun luxuriant vegetation as well as forests. Towards early morning and at evening time they are most lively. The rest of the day is spent in the shade of the acacia-bushes. At the approach of danger they stand erect, as though

moulded in bronze, with their abnormally long necks stretched out stiff and straight.

If the gazelle is assured of the direction whence the approaching enemy comes, it makes for the nearest cover, its neck still outstretched right in front of it, and moving with noiseless tread like a shadow. The sportsman is apt to be quite stupefied by their sudden disappearance. This peculiarity of theirs, and their colouring, which blends so well with their surroundings, together with their alertness and caution, explain why they have eluded so many early travellers.

In the hot season I used to like to hunt them at noontide. To follow the chase of these animals a hunter must not mind the fearful heat. How numerous they are in the north of German East Africa may be gathered from the fact that within a few hours I once shot five bucks and saw (but did not shoot) about fourteen females near the Kitumbin volcanoes!

This kind of hunting is very fatiguing. It is very tiring to get across the thorny places as quietly as possible, and yet not too slowly, so that the game may not take flight before one is near enough to take good aim. If the search is too long drawn out, they are often up and away before the hunter can sight them. It is a charming sight to see these gazelles, singly or in small herds of about eight, as they seek their food towards eventide, raising themselves every now and again on their hind-legs. This, however, is not often possible; and when it is so, it is generally in the dry season, when these gazelles have to be pretty

quick in finding sufficient fresh vegetation to satisfy their appetites.

So far it has been found impossible to keep this animal in captivity, even in Africa, much less to convey it as far as Europe. Like the wonderful Kilimanjaro white-tailed guereza (*Colobus caudatus*), this gazelle seems to be unable to thrive except in surroundings for which no kind of efficient substitute can be devised. Menges, a great expert in this kind of thing, tried to preserve it in Somaliland, but in vain. Personally, I attribute the failure of all attempts at keeping gerenuk gazelles in captivity above all things to unsatisfied longings for companionship. It would be well first of all to provide friends for these prisoners in the shape of goats.

Among antelopes similar in size to the gerenuk gazelles we find the reedbuck, which are widely distributed. Reedbuck have two very different haunts—the marshy plains and the hills, and they vary accordingly; but a bald spot and a gland under the ear are common to all types. A very beautiful inhabitant of the hilly districts is the Masai mountain-reedbuck (*Cervicapra chanleri*), which is absolutely different, both as regards appearance and habits, from the reedbuck found lower down.

About the time of my first visit to Africa the American traveller Chanler found a long-haired grey reedbuck in British East Africa whose habitat was on the mountains.

The first to find and bring home this beautiful species from German East Africa was myself. It is a near relative of the South African red reedbuck (*Cervicapra*

fulvorufula), and is one of the most curious objects to be found in our museums.

I have found this reedbuck exclusively in hilly districts. I must say, indeed, that the name is hardly suitable, for it does not live among the reeds, but partly in the midst of fairly high shrubs and bushes, and partly on the knolls and mounds in the mountainous districts. It abounds in small herds of about five on the western slopes of the Kilimanjaro, and on all the hills of the Masai district. I am surprised that earlier observers have not noticed them. Chanler's reedbuck is not tied to the water, and is found on dry and grassy heights. In such a neighbourhood, not far from Lake Rudolf, it was later found and killed by Lord Delamere.

In a great part of Africa we find one reedbuck that lives on the plains and another on the hills. Chanler's reedbuck is the kind that lives on the hills.

This species is distinguished by a peculiarly long tail of the pretty isabelline-grey colour, white underneath. Although this animal may appear variously coloured according to the light, it is always to be recognised by the long and conspicuous tail.

The hill reedbuck, with the bushbuck (*Tragelaphus masaicus*) and the klipspringer (*Oreotragus schillingsi*), together form attractive objects amid the hills and heights, and all three furnish good material for the hunter and observer who is equal to making expeditions under an equatorial sun. Towards the evening one can, if cautious, come across little parties of these reedbuck as they graze; but during the daytime they are as

C. G. Schillings, phot.

THE STRANGE GERENUK GAZELLE

prone to take flight as the ordinary reedbuck. The horns of these antelopes are never so strongly developed as those of the dwellers in the reedy plains and marshes, their colouring affording them ample protection in its rocky and stony haunts.

A near relative is Ward's reedbuck (*Cervicapra wardi*), found in Masai-land, as well as in many other

IT WAS AT A HEIGHT OF ABOUT 10,000 FEET ON THE VOLCANIC MOUNTAIN GILEÏ, IN THE MIDST OF A WOOD, THAT I GOT THIS PHOTOGRAPH OF THE MOUNTAIN-REEDBUCK

parts of Africa. It is very much smaller than the South African reedbuck, and its finest horns cannot be compared with those of its southern cousin. One can find it every morning and evening, alone or in small herds, on the grassy expanses near the water, where it also takes its customary rest during the remainder of the day.

This reedbuck allows one to approach very near, and

then it suddenly takes to flight in quick leaps and bounds. More than once has it startled me, making me think some dangerous wild animal was upon me. It is always difficult to kill it in the act of flight, for it doubles like a hare, and in the high grass it is scarcely possible to hit it with a bullet. A fowling-piece will easily bring it down, but it must be ready cocked to hand.

In the Pangani Valley I once spent a whole day trying to capture a fine male reedbuck before I succeeded in hitting it in full flight. I particularly wanted this specimen to complete a reedbuck group in the same season's coat for a museum.

The real abode of the reedbuck is to be found where burning heat lies heavily on the reed morasses, which, broken only by a few sedges, stretch before one on the river-banks.

In August I found the females were pregnant, but the bucks were extraordinarily shy, and only after considerable difficulty was I able to kill a fine specimen.

On the whole the chase is best pursued during the morning and evening hours. One has to remember the fact that these reedbuck warn one another of the approach of the foe by a piping tone. This warning is also recognised by the waterbuck ; the birds also pay attention to it. When this cry resounds through the sedge-reeds, frightened marsh-birds and herons fly up suddenly into the air.

Wounded reedbuck usually seek out very thick sedge-beds, and are thus very hard to find.

The reedbuck seems to have a long future before it, in spite of the inroads of civilisation, because of its peculiar

haunts and habits. It loves to find a refuge in thick covert, and thus has a better chance than the animals which live out on the steppes.

Unfortunately that excellent work *Great and Small Game of Africa* informs us that the once common reedbuck is becoming very rare in Natal, Zululand, Bechuanaland, the Transvaal, and Swaziland.

Among the mountains of the Nyika lives a wonderful

A HERD OF FEMALE GRANT'S GAZELLES

miniature antelope, the klipspringer, of which I discovered a new species (*Oreotragus schillingsi.*) This graceful creature, covered with thick grey-greenish hair, and adorned with a white beard, springs from crag to crag like a feather ball, uttering a shrill cry of warning.

So far as I could ascertain, the klipspringer is called "n'gossoiru" by the Masai. I found this beautiful

mountain antelope everywhere—in the riverless districts of the mountain slopes, as well as on the stony crags of the Masai highlands.

The low woods and lighter forests are alive with attractive dwarf antelopes: Harvey's duiker (*Cephalolophus harveyi*), the eyed duiker (*Sylvicapra ocularis*), the dik-dik antelope (*Madoqua kirki*), the musk-antelope (*Nesotragus moschatus*), and other kinds of little dwarf antelopes, all of which I have often killed and collected for our museums. But it was nearly always impossible to photograph them, as the proper light was wanting in their special haunts.

RAPHIA AND OTHER PALMS, TAMARINDS, AND BAOBABS GREW BY THE RIVER-SIDE. IN THE BACKGROUND OF THIS VIEW MAY BE SEEN A SPUR OF THE INNSHORN GARE MOUNTAINS

XXVI

Apes and Monkeys

TWO anthropoid apes, the gorilla and the chimpanzee, formerly known only on the West Coast of Africa, have recently been found also on the western boundaries of the German East African forests.

Père Guillemé, who lived for many years on Lake Tanganyika, and who, after seeing all his missionary comrades succumb to the deadly climate, started out again with about twenty "White Fathers," told me, as long ago as 1899, that the chimpanzee known as "soko" was to be found to the west of Tanganyika on the forest-covered Mzana Mountains at a height of about 6,000 feet.

These caricatures of humanity were met with later on the boundaries of German East Africa, and the German East African gorilla (*Gorilla beringei*) has lately been found by Captain von Beringe on Lake Kivn, and

has been called after its discoverer by Prof. Matschie. Prof. von Hansemann assures me that this species differs in the shape of its skull from the gorillas of the East African coast-lands hitherto known.

Visitors to the German Horn and Antler Exhibition in 1900 will remember the colossal gorilla exhibited there, which had been killed in a West African forest. Very probably it did not show the full size attained by these gigantic man-apes, the terror of the primeval forests.

In early works on Africa we are furnished with many fantastic and highly coloured tales about these apes. It is to a German—von Koppenfels—that we owe much of our knowledge about them, and we should perhaps have been able to learn much more about their habits and ways if he had not died from a wound received from a buffalo. I look forward eagerly to deriving some trustworthy information concerning them from the traveller Zenker.

Chimpanzees and gorillas are not to be found in the greater part of German East Africa, nor in the Masai highlands which I traversed. These regions harbour, however, several species of a very interesting, peculiarly shaped ape, very shy and retiring, which lives on high trees in the forests and feeds almost entirely on leaves. These are the guerezas (*Colobus*)—silky haired, with bushy tails, coloured black and white, and with serious, bearded faces; the finest species of them, the "mbega" of the natives (*Colobus caudatus*), is to be found in the forests of Kilimanjaro and the Meru Mountains. The mbegas are thumbless, and have a curiously hasty and

C. G. Schillings, phot.

MY "MBEGA" MONKEY OR WHITE-TAILED GUEREZA, WHICH LIVED FOR TWO YEARS IN THE BERLIN ZOOLOGICAL GARDENS, AND WAS THE ONLY SPECIMEN OF HIS SPECIES EVER SEEN THERE

impetuous way of tearing the leaves from the branches and putting them in their mouths. Frequent eructations interrupt their meal, which they make only in the morning and in the evening. Captive specimens never try to bite any one until they have gripped him with their hands and drawn him close to their mouth.

These melancholy animals, so wonderfully adapted to their haunts, live high up in the gigantic forest trees, sometimes in large, sometimes in small groups, jumping from bough to bough and tree-top to tree-top. Their bushy white tails hang low, and, as they jump, the hair of their bodies spreads out, giving them quite a unique appearance, like lichen suddenly come to life.

The mbega hardly ever comes down to the ground. It finds enough water to drink in the cavities of the old trees, and, on account of its long legs, it can only move forward on the ground with great difficulty, looking very helpless. On occasions I found the mbega very inquisitive, and not particularly timid. Unfortunately, like so many other animals, these monkeys have much to fear from the progress of civilisation, for their fur is greatly coveted. Already their numbers have been much thinned by fire-arms and by the poisoned arrows of the natives. This is the more to be lamented as, unlike baboons and meer-kats, the mbega is not hurtful.

The guereza has something in common with those savage races that melt away as civilisation advances, and which prefer to go under rather than make any concessions. A free and independent dweller of the forests, finding

food in plenty in the foliage of the tree where it lives, this animal, like so many others—like the elk of the northern forests, for example—has become settled in its habits, and won't alter them the least little bit. Its huge stomach, which never seems to leave off digesting, requires an incredible quantity of aromatic leaves of various kinds, for only now and again does the mbega consume fruits. It seems to dislike any other form of nourishment, although it may sometimes seek birds' eggs or young birds. Towards morning, and even during the day, these monkeys indulge in a peculiar kind of chorus, which is hard to describe—a kind of humming and buzzing that the uninitiated would never suppose came from an monkey.

Early in the morning, when a thick mist lies on the forests and a saturating dew hangs in heavy drops on leaves and branches, and everywhere silence still prevails, this chorus of the monkeys, beginning softly, swells into a mighty sound, then dies away, only to begin afresh. This enables the hunter to find the "ob goroi" of the Masai very easily. He has but to look up to the great summits of the *Juniperus procera* and other forest giants to see the quaint minstrels as, with tremendous leaps, they take to flight. Besides this chanting, the mbega frequently gives out a short grunting noise.

In the autumn of 1899 I was first able to ascertain that the guereza monkeys are snow-white when born, and that their colouring comes gradually afterwards. I discovered, too, that they were much tortured by a kind of tick (*Ixodes schillingsi*) in some forests. These

ticks fasten exclusively on to the eyelids, and cause bad festering sores.

Many years ago I found a large number of mbegas in the Kahe and Aruscha-Chini oases, which are connected with the Kilimanjaro highlands by permanent water-courses and high trees. But, as Prof. Hans Meyer remarked, they are distinguished from the guerezas of the mountains by their shorter hair.

I was informed that these monkeys were not hunted by the natives, as they were considered sacred. But in 1896 the hunting Askaris of the Moshi station were not long able to withhold their rifles from this harmless animal. They went out on monkey-hunting expeditions lasting for several days. Now the animal is a rarity—if any are to be found at all.

In 1900 I shot three mbegas of the Kahe oasis, taking three days to do it, for the Berlin Museum. Not only here, but everywhere on the mountains a rigorous pursuit has lately been organised. I frequently found traders, Greeks as well as Indians, with many hundred of mbega-skins ready to be sent to Europe. A missionary amused himself in his spare time by bringing down good specimens of this monkey, worth seven shillings apiece. He told me he managed to kill as many as eighty in one month!

A monkey very similar to the white-tailed guereza is found in West Africa, which some years ago was much in vogue, and of which, according to official reports, several hundred thousands were exported. It will not be long before the supplies in the isolated and not over-extensive forests of Kilimanjaro and the Meru Mountains are

exhausted in the same way. A tax has lately been levied on every monkey killed. This is very commendable, but who will enforce the regulation?

During my expeditions through the mountain-forests, I often found poisoned arrows as thin as knitting-needles. They had been used by the natives in hunting the mbega, and had been lost. It was merely for the monetary value of these monkeys that the natives killed them.

Before the European invasion the natives only killed the mbega to use its fur as a foot-ornament for the Masai Ol Morani. In former years people often made attempts to secure the young of these beautiful monkeys and to convey them to Europe. However, all these efforts were in vain—the sensitive character of this solitary monkey made them impossible. The young did not grow to their proper size, and if they got as far as the sea, or at best to the European coast, it was but to die.

For these reasons I determined to procure an old animal. I succeeded, none too easily, in getting hold of an old male by means of a shot which grazed its head; but now my troubles began in earnest. The monkey resolutely refused any kind of food. The care of the wound in its head was by no means pleasant. The animal kept trying to get its arms round the attendant, grunting angrily and biting fiercely at him the while. Later the doctor of the station helped me to dress this wound, and at length it healed.

Meanwhile I had managed to get the animal some fagara leaves and tendrils which I knew were its chief food. Whenever these leaves were at all withered, the

C. G. Schillings, phot.

A TROOP OF BABOONS OUT ON THE VELT

mbega rejected them vehemently, and I had to get fresh ones—often no easy task. It always tried to tear off the leaves of the branch held out to it, as it was wont to do during its days of liberty, being much handicapped in this by the want of a thumb. I accustomed it gradually to bananas.

The strongest and most herculean nigger of my assembled caravan was appointed keeper of the animal during the march. This man was a member of the Wadigo tribe. In his youth he had been taken to the velt by the Masai, before the days of the rinderpest, and when they made their cattle-stealing expeditions as far as Tanga on the sea-coast. He had learnt thus how to tend cattle and animals of all kinds.

It was a comical sight to see this black, six feet high, with his good-natured child's face, holding up a primitive sunshade over the mbega, carefully wrapped up, and bound to him by a leathern thong. The mbega was always trying to bite the black, and one could not help laughing at the sight of their struggles. It was always amidst the amicable jeers of the other carriers that peace would be restored and that "Feradji Bili" would at length be able to go on his way with his ward. But there were continually fresh difficulties to be overcome. On the march to the coast it was with the greatest trouble that we procured creeping plants in sufficient quantity to nourish the monkey, for the fagara did not grow here. Then, too, the mbega developed symptoms of fever, which I sought to ward off by quinine. But at last it arrived at the coast, and was transported to Europe, where it has now lived for two years, in the Berlin Zoological

Gardens, under the care of my friend Dr. Heck. It is the only living specimen which has so far been brought to Europe.

Later Captain Merker managed to procure three full-grown specimens. These I tried to bring to Europe on my fourth journey home, but failed, in spite of every effort, chiefly because the monkeys, although long accustomed to one another, suddenly began fighting in the narrow hold, and seriously hurt themselves. Thus only one of them, a female, reached the Berlin Gardens, and she died three days later.

Mbegas in captivity refuse all food offered them and pine for their beloved mountain-forests. This is unlike the habits of the baboon and other monkeys, and also unlike the anthropoid apes, which become extraordinarily attached to their keepers.

The behaviour of the mbega has nothing monkey-like or comical about it, but is rather always earnest, steady, and reserved. To me it always seems a kind of reflection of its sombre haunts. It is extraordinary how differently baboons behave, whether in freedom or in captivity!

Baboons do not live, as many people seem to believe, in the branches of the trees in tropical lands. They are dwellers either on the plains, which they explore thoroughly, or on the mountains.

A confirmed plains-dweller is the yellow baboon, scientifically known as *Papio ibeanus*, but called "njani" by the inhabitants of the coast, "ol'dólal," by the Masai, and "kireije" by the Wandorobo. This monkey, which lives in large herds united by the strongest social ties,

sleeps on a tree, but during the day it traverses the thickets and river-side woods in search of food. This consists largely of grasses, and also of tree-fruits, leaves, grass-seeds, all sorts of insects, besides young birds and any eggs it may happen to come across. I have never been able to confirm the statement that baboons hunt full-grown dwarf antelopes, but I do not doubt that there

BABOONS

are times when they kill quite young or newly born animals of this kind and devour them.

It is very interesting to note the way in which the biggest baboons in a herd keep watch against the onslaughts of leopards, their greatest enemy, and other beasts of prey. Three or four experienced leaders take their stand on a fallen tree-trunk some few feet above the ground, and act as sentries. The herd feels perfectly safe under their guardianship. The enormous old males, whose teeth are longer and stronger than those of the leopard, as well as the smaller females with their young of various sizes, all

go carelessly into the woods, plucking the grasses, picking up stones, chasing locusts or other insects, or indulging in various antics.

I have sometimes noticed in the midst of these herds, or only a few feet away, impalla antelopes, dwarf antelopes, and even waterbuck and ostriches. Especially during the noontide hours are these animals thus accustomed to disport themselves.

Suddenly the scene changes. One of the animals has either seen me or got wind of me. A honey-guide flutters around me suddenly with a cry; another bird betrays my position through its croaking; and, like lightning, the whole concourse of animals flee in all directions amidst clouds of dust. The troop of monkeys has been given the alarm by a kind of squeak of warning. Those keeping watch on the tree-trunk come down, and the females and younger ones begin to take flight. At length, with flowing manes and tails erect, the stout old valiant fathers of families gallop off quickly, but keeping on the alert the whole time. This alertness during flight, and without stopping at all, is a characteristic peculiar to baboons and spotted hyænas. I have never noticed it in any other animal.

To me it seems a fact, about which there can be no doubt, that baboons have a language of their own, and that in danger the old animals give their commands by means of some simple method of speech. During flight it is easy to notice the workings of their social organisation. The older monkeys dragoon the younger and more inexperienced into batches, regardless of thumps and cuffs,

C. G. Schillings, phot.

and help them on their way. Presently we see some of them clambering up trees to get a better view of their foe, and then again a great cloud of dust informs us that all have sought safety in further flight.

The eyesight of the baboon must be extraordinarily keen—much more so than that of the natives. The baboon which I kept prisoner in my camp recognised me at an incredible distance when I was returning from my expeditions.

It is most interesting to watch the troops of baboons as they go to drink of an afternoon between four and five o'clock, and to note how cautiously they quench their thirst. Their great object is to avoid the crocodile. Baboons never drink without having the water watched and guarded by some experienced old members of their troop, either from a tree or from the shore. The moment a crocodile is sighted the alarm is given. Like lightning the whole troop tear up into the trees for safety, and give vent to their anger by a chorus of grunts and squeaks. From their high watch-towers the experienced old baboons keep an eye on every movement of the crocodile, and it is only after the most cautious survey that they at length decide once more to approach the water to drink, or make for some shallower spot, where the crocodile could not so easily get at them.

In the riverless regions of the Masai country one comes across quite another kind of baboon, which is of a dark green colour (*Papio neumanni*). It was discovered by Oscar Neumann in the beginning of the year 1890. These monkeys live in large herds on the mountain slopes.

[illegible]

[illegible] is not one of the [illegible]. Their death is so human [illegible] the mind to pull the [illegible]. Death [illegible] the countenance [illegible] intense agony in [illegible]

[illegible] moment I experienced [illegible] baboon and followed [illegible] cavern, where I found him dying [illegible] to the death-wound. On another occasion I reached a mountain stream, after a twelve hours' march at the head of my caravan, when we were all nearly dead with thirst. There were no signs of human beings about the surrounding craggy world of rocks, when suddenly one of my people called out in a tone of fear, "Mtua Bwana," "A man, master!" as a human-looking face appeared, looking from behind a

boulder about a hundred yards away in the grey evening light.

But it was only a very old baboon, which was surveying us, and which had all the appearance of a man, both to the beaters and myself. It was covering the retreat of the herd. Unlike meerkats, of which there are three kinds in the Masai lands, and, unlike other kinds of monkeys,

CAPTURING A GALAGO

baboons are notable for their sociability. In captivity they become most attached to their masters, or to other people they come in contact with; but they divine at once where there is no sympathy, and hate accordingly. A specimen I possessed was extremely fond of me, but refused all the advances of an expert animal-tamer, who had subjugated numerous other animals to his will.

For many years, in Moshi, another baboon was kept

prisoner, chained before the gates of the fort. A most intimate friendship had sprung up between this great, dangerous-looking baboon and a little native child about eighteen months old. From some hut in the vicinity the little one crawled on all-fours to the monkey, and played fearlessly with his huge friend for many hours every day in a very droll and amusing fashion.

On Christmas Eve in 1899, when we were all within the walls of the fort expecting an attack by the natives, all the inhabitants of the station suddenly poured in like a flock of sheep about nine o'clock. The baboon, stricken with fear, managed somehow to break loose, and joined the rush into the fort.

PAPYRUS

XXVII

Stalking Expeditions in the Nyika

I HAVE had many hundred fruitful stalking expeditions in the Masai-Nyika, but also many hundred fruitless ones. I now request the reader to follow me in spirit on some such expeditions, which I will select in such a way as to give as exact as possible a picture of my experiences.

With the break of day I leave the camp, accompanied by about thirty carriers. Each man brings with him a calabash of water, and no more. Noiselessly, in a row, they follow me and the Wandorobo guides. Immediately behind me come the bearers of my photographic apparatus, and my rifle-carriers. All the men are accustomed to fall at once to the ground, upon a gesture from me, making themselves, as nearly as may be, invisible. This, of course, demands much patient practice.

On departure from the camp it is impossible to tell whether it may not be necessary to spend the night far

off somewhere on the velt; matches are therefore brought along in a small pouch. If, by any chance, the matches (called by the bearers "Kiberiti") are not forthcoming, we are simply obliged to let the Masai and the Wandorobo men generate fire in their own primitive fashion. A wooden stave is twirled between both hands until its tip takes fire through friction with a second stick which is being violently brandished round and round; on being brought into contact with some light inflammable dry grass or leaves, it sends up immediately a glowing blaze.

A bearer carries my coat; others have charge of some small axes and ropes. I never wear a coat during the day; an earth-coloured, raw silk shirt, wide open and with the sleeves rolled up, suits me best under the Equator.

Very broad, strong, heavy, sharp-nailed strap-shoes of the best workmanship; two pairs of stockings, one drawn over the other so as to keep off the heat as much as possible; soft leather gaiters, earth-coloured trousers, and a very broad-brimmed and well-ventilated hat of double felt, complete my extremely simple outfit. I have very rarely worn a tropical helmet in the interior.

The scorching glare of the sun soon fades all garments to the same hue. *Tant mieux!* The more earth like they become in colour, the nearer I get to that "mimicry" of nature which is so much to be desired. The less noticeable the hunter is, the better. All regard for appearances has to be got rid of. One's spectacles, which are an essential, and a long, square beard, do

not add to the beauty of one's outer man to any great extent!

It would be pleasant to have the natives imbued with respect for a white skin *for itself*, and not merely when it is dressed up in uniform. But I have observed, alas! that now the negro, if he has come a good deal in contact with Europeans, has already learnt to dis-

A COCK MASAI OSTRICH AND TWO HENS

criminate in this way. This is particularly marked on the coast, but even in the interior there are symptoms of it. In British East Africa the Askaris have orders to salute any white man who is a guest at the Fort. In German East Africa, according to my experience, this would be out of the question.

My spectacles, framed in the best gold, were certainly a source of inconvenience when they became clouded

from the effects of perspiration. So I was o
frequently to manage without them. Fortunatel
eyesight is very nearly equal to that of the native

Water for my own use I have for years been
tomed to carry with me, in bags of double linen
this method I can most confidently recommend.
is at all possible, I have the water boiled; but of
I have often been obliged to put up with the co
of some muddy marsh-pool.

Neither I nor my taxidermist have ever b
with us or tasted any spirituous drinks of any kind
ever, except in small quantities for cases of sic
and with the profoundest conviction I can recon
this abstinence, which unfortunately is practised o
a very few. Even the little that I have had wi
has generally been given away to others in cases o
ness. It is certainly because of this abstinence
have survived some bad weeks, when wine had a n
effect upon me, owing to my being unused to i
was, in conjunction with incredible doses of stroph
and digitalis, the only thing that could possibly
saved my life.

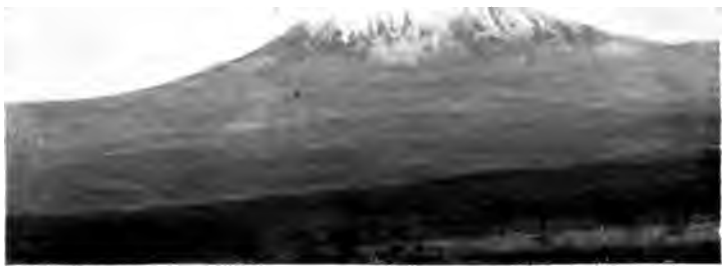
The round disc of the sun has risen in the va
distance; brief, as always in the tropics, but glo
beautiful, is the spectacle of sunrise. Sharply o
against the horizon there lies before us, open and
less, the mighty mountain-tract of Kilimanjaro.
feet there are already gathering single small
then clouds in thicker masses; soon a sea of

C. G. Schillings, phot.

A BIRD'S-EYE VIEW OF MASAI-NYIKA

will hide it from our sight. Beside it we see the Mawenzi—a dark, threatening, desolate dome of rocks.

As we move forward over the scattered blocks of lava we are reminded that this rocky region was once the scene of some tremendous volcano's display of power—a primeval convulsion to whose forces, according to Hans Meyer, is to be attributed the foundation in course of



SNOW-CAPPED KILIMANJARO. THE MOUNTAIN IS OFTEN HIDDEN FROM VIEW FOR MONTHS AT A TIME BY MISTS AND CLOUDS

time of the "Great Rift Valley"—the choked-up tract over which we are now ranging.

According to the same author, Kilimanjaro no longer harbours northerly types of mammals (as do the Abyssinian mountains), because the "wave of boreal life" in the Diluvial Period was unable to penetrate so far as the Equator. The fire-breathing gullys of the Kilimanjaro at one time strewed masses of lava all around like sand.

To our right, in a deep hollow of the ground, there stretch papyrus-grown marshes—the westerly Njiri

marshes. The declivities of Kilimanjaro send them down great floods in the rainy season, turning the country, for many miles around, into a lake.

The natives maintain that subterranean tributaries from the mountain plateau feed the marshes. The "Mologh" brook, which I discovered in the volcanic rock, and which had evidently dried up suddenly, gives colour to this theory: the permanent tributary to the easterly Njiri marsh, rising perhaps subterraneously in the bed of the crystal-clear and icy current of the "Ngara Rongai," still further supporting it. The whole north and north-east side of the chain of mountains is uninhabited, unvisited of man, and, in the dry season, completely waterless; the rain comes down always on the other side, and it is consequently there that the native tribes make their homes. But, in my opinion, the total number of natives on Kilimanjaro has been for years considerably over-estimated.

Over grassy plains glistening from an incrustation of salt, my way leads me to the border of the fen. Immense papyrus-forests tower there, where the never-failing water in the deep bog-streams affords the necessary conditions for life, and provides as well some extremely luxuriant forms of bog-flora.

The peculiar *Pistia stratiotes*—"Junge-junge" of the Waswahili—is especially abundant here, while *Ceratophyllum* and the northerly floating-plant (my own discovery) *Pothomageton* are to be found in every direction. Already this latter has plainly annihilated some sister-forms of flora.

The bird-world has been awake for a long time. In the thicket of an acacia grove my ear catches the well-known measured cadence of a gorgeously coloured shrike ("wurger"), very clever at keeping itself hidden in the branches. Over and over again the bird repeats its ringing cadence; it has four notes, which increase evenly in volume, "Kutu tititi!" Red-beaked hornbills (*Lophoceros*

THE KAISER WILHELM PEAK

erythrorhynchus) fly from tree to tree at a safe distance in front of us, watching with curiosity the strange newcomers. A harrier (*Circus ranivorus*) glides over the bog; wondrous-hued rollers sweep screaming here and there. A bustard (*Eupodotis gindiana*) rises, with its curious vacillating, skilful flight, and disappears in the direction of the velt with a loud "raga-garaka-raga-garaka!" This bustard can perform the oddest feats of

flight; it turns somersaults in the air, like a tumbler-pigeon, wheels about and up and down, and seems to turn the act of flight into a game of play, as no other member of the bird-world that I am acquainted with can do!

In spite of the early hour, a brooding warmth lies over the landscape at the border of this marsh. An abundance of bird-life displays itself with every step we take; but the ground in the proximity of the marsh-land is alive with young frogs (*Rana madagos cariensis*). A curious worm-like serpent—it looks like a blindworm—(*Melanoseps ater*) is added to the collection and sent back to camp; and in another moment we have cut off the retreat of a huge pythoness, about five yards long, trying to escape from us into the thicket. It is killed and forthwith skinned. My little caravan goes forward with vigorous strides.

Now, suddenly plunging forth from a little fen-lake, overgrown with rushes, there comes running towards the velt a herd of wart-hogs, which we have disturbed at their morning bath. My rifle is handed me; I take aim, fire, and succeed in laying low a straggler which had almost reached the sheltering sueda-thicket in his hasty flight.

We now proceed without a halt. Numerous hippopotamus-tracks cross the marshy ground in all directions; some are freshly made, and point to the passing of an old beast, with its still quite tiny young ones. These huge marsh-dwellers have, however, betaken themselves long since—with the earliest grey of morning, indeed—to the safe depths of the water.

A clear, shrill bird-note breaks joyously over the marsh

just above our heads. It is the white-headed sea-eagle (*Haliäetus vocifer*). A second eagle, perched not far off upon a leafless tree, is bold enough to let us come quite close up to it before it flies off.

"Nyama Bwana!" now whispers my rifle-carrier. And he is right; a reedbuck is to be seen some distance away,

WHITE-BILLED WEAVER-BIRDS (*TEXTOR ALBIROSTRIS INTERMEDIUS*), AND OTHER WEAVERS BUILD THEIR NESTS IN THE SPREADING BRANCHES OF THESE GREAT "UMBRELLA" ACACIA-TREES

feeding upon an open grassy plot. As yet the beautiful tawny antelope, as large as a deer, has not seen us; and for some minutes I am able to observe it, cropping the young grass that sprouts from the fen-pools, and every now and then bethinking itself anxiously of the question of safety. It is a female, so I leave it alone. We proceed, and the antelope, bounding high into the air, disappears in a few leaps.

The salt-plain becomes wilder and more desolate, and poorer in forms of animal life. Only some "crying lapwings" follow us with their jerky flight, giving out as they go their strange, soft, melancholy call. We march on for another hour, penetrating further and further into the desert by the banks of the marsh; suddenly, close in front, there peers at us one of the magnificent, vividly tinted saddle-billed storks (*Ephippiorhynchus senegalensis*), which almost instantly seeks salvation in flight. Just where the stork's powerful pinions have landed it in safety, two little gazelles are frightened away from the water; they bound several times to right and left, and then set off slowly, with measured pace, into the desert, swaying lightly to and fro. These are Thomson's gazelles (*Gazella thomsoni*). They glance inquisitively over at me; from time to time they bend their heads as if to eat, only to lift them quickly again. We can now discern in the background, on the wide, level ground, a greater number of these lovely brown creatures, with the pretty black markings on their haunches. They let us get much nearer them, but then, with their heads stiffly raised, they move off, very soon breaking into a trot.

Called to attention by the fugitive Thomson's gazelles—the "goilin" of the Masai—there are now eyeing us a number of their near relatives, the splendid Grant's gazelles. Several females are grouped round a magnificent buck, which is decked with lyre-shaped, spreading horns a foot and a half long. These animals take flight, too, and, changing their direction frequently, form suddenly into a half-circle round me and my company, so as to

inspect closely from behind, and with a good scent, these strange visitors.

A dark object, immovable in a certain part of the velt about three-quarters of a mile away from us, has been recognised by me for some time as an old, solitary bull gnu (*Connochætes albojubatus*). Its horns well forward, its powerful head turned towards us, the gnu

A GREAT BULL ELAND

tries to discover what is approaching him, but only a violent slashing to and fro of his bushy tail betrays his curiosity. Suddenly, after first darting about the ground in our vicinity, five or six spur-winged plovers (*Stephanibyx coronatus*) rise above our heads. These birds are the detestation of every sportsman. As is their custom, they sweep, howling and scolding, from side to side, and thus serve as a warning to the animal-world of

approaching danger. The bull gnu lingers on, however, curious still, rather than nervous. We approach ever closer, but apparently heading off to the right of him; and I give orders that none of my people glance in his direction. But the plovers will not leave us; by degrees the gnu takes warning, and moves off, with head stiffly bent, in leaps which look short, but which carry it over the ground at a good rate. From time to time it halts, and turns round with a sudden, violent movement, lashing its tail furiously and peering in our direction.

The tiresome plovers have left us at last, and slowly I make another attempt to get up to the bull, this time in a lateral direction. I succeed at last in this, and am able to get a shot at the great beast—sharply defined against the clear desert background—two hundred yards away. The gnu shivers through all his body, and turns straight towards me, but then rushes off on three legs. My bullet has hit too far back. Instantly I follow up its track among the acacia-bushes.

In this part of Africa, where neither horse nor dog can stand the unhealthy climate, there is only one way of reaching your game, when you have only wounded. You must follow it *at once*, as you do when shooting elk. For with even the shortest delay, the heat of the sun dries up the blood-tracks unrecognisably; other animals cross the dry trail, and vultures and jackals will have torn to pieces the decaying carcase before the hunter can be on the spot.

So I follow the blood-tracks for half an hour. By using the tracks of hippopotamuses and waterbuck, the gnu

has found its way into a shallow bog, through which we have to wade knee-deep in water. Presently we see him in flight again upon a large, level bit of ground which stands out of the water and is covered with thick vegetation. I could not possibly get an aim at him, and I perceive that this pursuit is going to be a lengthy business.

Gnus, even when wounded, are among the most

GNUS AND ZEBRAS ON THE SALT-INCRUSTED PLAINS NEAR LAKE NATRON

tenacious of the wild beasts of Africa; their endurance is extraordinary. The endurance and insensibility to pain of most African wild creatures are simply astounding. This fact is acknowledged by all experienced hunters, without exception. The vitality of African wild animals is ever so much greater than of those we have in Europe. It is to be explained, I suppose, by the degeneration of

the latter, among which "natural selection" has for so long been more or less repressed. The African native, too, displays incredible powers of recuperation, and after the severest wounds he produces "sound flesh" at a rate which must be the envy of every European and the admiration of the surgeon!

In the further pursuit of the gnu we come at every step upon fresh representatives of the ornithology of the marsh; the curious umbrettes (*Scopus umbretta*) fly lightly about us. Pretty little black marsh-fowl (*Ortygometra pusilla obscura*) slip in and out of the sedge-growth at our feet quickly hiding themselves from observation. Splendid snow-white egrets investigate the strange looks of their human visitors, and then instantly retire into safety. With a warning cackle, some Egyptian geese (*Chenalopex ægyptiacus*) fly off to the open water; the strangely shaped little parra flutters up between the reeds, visible for a moment only. But in the drier parts our steps are haunted continually by little male birds belonging to that beautiful species the black-and-white "crying lapwing." Each couple of this particular kind of lapwing rules at this season over a certain well-defined district, its own little kingdom, from which it jealously drives away all rivals. Everywhere within this tiny realm the little hens are hatching their prettily spotted eggs. This accounts for the anxiety and suspicion of the cocks.

Now, again, the dry desert receives us, and going through plantations of salvadora, acacia, and terminalia, we reach a part of the velt which, here and there at least, affords a little covert. But the gnu, which has

already once covered his blood-tracks, has likewise been going forward, though still on three legs.

Long ago I made it a rule to myself always, even here in Africa, to follow upon a trail which has been once entered upon, so long as it holds and pursuit is possible. So we go on for another league into the desert, when at last the sharp eyes of my bearer catch sight, he thinks, of our quarry, moving forward slowly about a mile or so in front of us. And he is not mistaken. As we proceed I note several places where the hunted animal has made a halt, and lost a good deal of blood; two splinters of bone are also found. Now begins a monotonous tract of sueda-bushes; covered by them, and leaving my people far behind, I succeed in getting up very quickly to the gnu and delivering a well-placed finishing-shot. My carriers hasten up. A number of them, under my direction, cautiously skin the dead animal; the skin and head, with the horns, are taken back to the camp, there to be carefully dressed and preserved. Other carriers are sent home with the flesh.

Round the remains of the gnu, after we have withdrawn a little distance, a number of vultures and marabous soon gather. Already, for a long time, a fork-tailed kite (*Milvus ægyptius*) has been hovering over us, continually approaching within a few yards. These birds follow one constantly, knowing that they may count upon coming by some booty in this way. Presently two others make their appearance, and as they swoop to the ground and begin to pick up little bits of meat, there is a rushing sound in the air, and, down from the clouds,

there whizzes obliquely a dark-winged object that settles on the remains of the gnu. It is only when at a little distance from the ground that the vulture spreads out his wings, at the same time stretching forth his talons, thus mitigating the force of his fall. Greedily, with ungainly hops, he hurries towards the remnants of my booty. From different directions he is followed by others and again others of his kindred. Marabous let themselves down to the vultures without a movement of the wings, like parachutes, their long legs stuck quaintly forward. But they never by any chance land upon the carcase; they reach the ground at some distance from it. Vulture upon vulture now comes whizzing down: the little carrion-vulture (*Neophron monachus*), picking out scattered morsels with its weak bill and pulling timidly at the larger fragments; the stately Rüppell's vulture, in its simple, sand-coloured plumage; the gaily coloured hooded vulture (*Lophogyps occipitalis*); the grey-headed vulture, my own discovery (*Pseudogyps africanus schillingsi*), and the "sociable" vulture (*Otogyps auricularis*), the largest and most imposing of all its tribe, whose occurrence in German East Africa I was the first to establish.

With incredible rapidity the assembled birds gobble down the fragments. Into the midst of their quarrelling and the flapping of their wings the smaller birds tumble cleverly down; they catch up the morsels of flesh that are flying about in the tumult, tear them asunder in the air with their claws, and swallow them. In the same way the preying storks ensure themselves their share of the booty. In an incredibly short time the troop of birds

C. G. Schillings, phot.

SOME SPECIMENS OF MY OWN GIRAFFE (*GIRAFFA SCHILLINGSI*). THEY ARE TO BE FOUND VERY FREQUENTLY IN MIMOSA-WOODS

have devoured the whole, while the wind carries over to us the noise of their scoldings and hissings. Those which are sated run aside with short, hopping steps, and then rise in the air, to seek, with heavy flight and well-filled crops, the neighbouring trees, there to give themselves up quietly to the business of digestion.

The short rest came just at the right time for us ; after about a quarter of an hour I set forth again into the desert. Now there stretches before us a long and arid plain, whose surface appears to be undermined and hollowed everywhere. Over our heads there hovers a pair of the beautiful juggling-eagles (*Helotarsus ecaudatus*), the most wonderful fliers I know.

Near the poverty-stricken bushes and shrubs there peep out here and there the marmot-like ground-squirrels, long-tailed, slender, and nimble, resembling in their colouring the reddish desert-ground. Raising themselves on their hind-legs, they look round at us anxiously, then disappear in the deep undergrowth.

It is by no means easy to bag these animals, although they are far from rare, and in some places are extraordinarily numerous. Many kinds prefer to inhabit deserted white-ant hills. When once they have withdrawn into this chosen fortress of theirs, you have to wait a long time before you see them again. Only when the wind favours you is there any chance of getting a shot at them. Often they put only their heads out of their refuge, keeping them there quite a long time, on the look-out. If shot at thus the wounded animal disappears entirely into the

depths of the ant-hill, and therein, owing to the extraordinary solidity of ant-architecture, is lost for ever to the hunter.

As I expected, crowds of the bigger mammals are now visible which in the daytime keep far away from the water. In the hilly country we come from time to time upon grassy prairies, very different from the arid velt. Little herds of Grant's gazelles (*Gazella granti*), are to be met with. They show themselves confiding, go slowly in front of us, and, once put to flight, cut most characteristic capers, for ever changing in direction. But this apparently aimless beginning brings them soon, in a wide half-circle, below our wind, and I take this behaviour therefore to be a manœuvre peculiar to themselves and carefully planned out by them.

When a herd of these Grant's gazelles move on ahead of us, the bucks are wont to bring up the rear, with stiffly-held heads and very dignified steps. Their heavy, wide-spreading horns, upon their extraordinarily strong, short necks, give them a sort of dignity. The females of this species are more than usually cautious and timid. So far as I can see, they have young ones with them all the year through. These young ones are suckled by the mother, hidden in the long grass; but when the herd takes to flight the young ones accompany their elders.

In one of the deeper-lying parts of the velt we now find a herd of big tawny antelopes. They are hartebeests (*Bubalis cokei*)—that remarkable, overgrown, ugly type which surpasses even the gnu in vitality and insensibility to gunshot wounds.

The hartebeest antelopes of this region have a special interest for me, since we are not yet familiar with the

THE SNOW-WHITE FEATHERS OF THE EGRETS

CRESTED CRANES (*BALEARICA REGULORUM GIBBERICEPS*)

differentiation of the local types; therefore I determine to make a careful study of them. Gliding snake-wise over

the ground, I approach the herd. In this direct contact with the glowing, burning soil, one's knees and hands can scarcely endure the heat. My own hands are not precisely pampered—they have long since been hardened, though it is true that they have got cracked in the course of photographic manipulations. My hands, my constantly exposed arms, and the upper part of my body, which except in the hottest hours of the day is often entirely bare and exposed to the effects of the sun—these all have acquired a brownish hue; so much so that on my return from the Dark Continent, it has often amazed even old and well-tanned seafarers.

It takes me a good half-hour to get near them; the scouts of the herd of antelopes peer more and more curiously at the place, less than a mile off, where my people have remained behind in the shadow of a euphorbia. In the course of my crawlings I startle two small hares from their warrens, and they seek safety in flight.

At last I am within range, and a brace rewards my labour. In long, even-measured flight, their heads sunk close to the earth, and wrapped in a cloud of dust, the surviving ten antelopes disappear in the distance. This time, by a lucky chance, I have succeeded in killing the two animals with one bullet.

In isolated places I find several deeply trodden rhinoceros-tracks, all leading to the Njiri marshes; they gleam in the sunlight, for the grasses which have been trodden down are more completely withered by the sun than the darker yellowish grasses of the velt. These paths I follow now for a league further, and then

C. G. Schillings, phot.

WHITE-BEARDED GNUS

come upon the fresh trail of an exceptionally large rhinoceros.

The beast has left the track, and probaby has settled down at a distance of not less than three, and perhaps of five or more leagues, in the desert.

After sending back the different servants into camp, there remain with me now only those picked carriers who can stand any amount of fatigue and upon whom I can rely most thoroughly for everything.

I believe my observation to be accurate in this, that the power of enduring thirst is quite differently developed in the various races and tribes, according to whether they are indigenous to well-watered, or waterless, regions.

Trustworthy observers have told me that, when in good condition, the Arab horse can endure thirst for three days and do its work. This would be impossible for any European breed, and for this reason I consider the employment of European horses in South-West Africa, for instance, to be most injudicious.

My Wanyamwesi men, in other respects most useful and valuable servants, who are inhabitants of the relatively well-peopled and well-watered country of Unyamwezi, could not endure thirst anything like so long as the Masai Ol Morani and Wandorobo men, who are a hardy folk, used to all kinds of deprivations.

I myself, of course, could not compare with any of the natives in this respect.

It is noteworthy that the native, even when enduring the agony of thirst, is able to get sleep at night, while

the thirsting European is incapable of driving away the obsession of the thought of water.

Water! I feel clearly how difficult it is to depict real, serious, burning, terrible thirst to those who, like most Europeans, have never felt it. The pangs increase as the temperature rises, for the scorching sun and the dry warmth cause the body to perspire and thus lose what it has of moisture. Quietly encamped in the shade, one can, of course, endure thirst for much longer than when on the march. But we have a proverb, "Staying in camp finds no water," and so thirsty men have often to keep on the march.

It is said that the Mahdi did his enemies to death by starving them, but not depriving them of water. Under normal conditions, it appears that with this treatment the death-agonies do not set in until the seventeenth day. From that day onward the Mahdi, with his suite, used to appear in the cells, so as to amuse himself with the last agonies of his opponents.

Thirst can kill, though, according to conditions of temperature, in two, or at the most, three days, as I have unfortunately proved by experience. Under unfavourable conditions, indeed, a single very hot day may suffice to bring even an unladen native to the end of his tether.

Three times have I suffered really badly from want of water. The first time, the caravan had been delayed in the neighbourhood of Nguruman and Nguaso-Nyiro for some days, on account of warlike operations. I had spent the whole day on the velt, hunting and making

C. G. Schillings, phot.

WHITE-BEARDED GNUS, HARTEBEESTS, AND ZEBRAS

observations, in the scorching heat of the sun, and sending a number of booty-laden carriers back into camp. At about ten o'clock a.m. my thirsty throat had been refreshed by the last drop of boiling-hot water from the big hunting-flask, so that now I had to go thirsty until evening, when I was sure of finding water in the distant camp. Hour after hour went by; all I saw enthralled me—I was then a new-comer in the El Dorado of the African zoology—and made me forget my thirst.

On our return the unusual mishap befell me of my two remaining guides losing their way; in the fast-coming darkness we plunged into the myriad labyrinths of a thorn-thicket, and by nightfall, scratched and torn by the thorns, it was impossible to get any farther. We had lost our bearings, had ended by wandering round in a circle, and now it became quite clear to me that we should be obliged to spend the night amidst the prickly pears. So we crouched down on a bare place a few feet broad, and as my foot knocked against a hard object, I looked and found it to be the half-mouldered skull of a buffalo, evidently a victim of the rinderpest. In the hope of being heard in camp, I foolishly fired away almost all my cartridges, but in vain; there was no answer.

Dead-tired, my tongue literally cleaving to the roof of my mouth, I now crouched down under a clump of trees grown over by creepers, my gun beside me with my four remaining cartridges.

A monkey uttered his piercing yell; an owl replied. Listening, with strained ears, in the absolute darkness,

we heard all around us a crackling and rustling in the leaves and dry branches. There were no trees that one could climb; it was impossible to take a step forward in the prickly thicket. Seated together, we wore through minute upon minute; the hours stretched out interminably.

Suddenly, to our terror, not farther than ten steps from us, there breaks out suddenly the howl of a hyæna. I lift my gun at once, but then the thought comes to me that I may perhaps need my few cartridges for sterner foes. We manage to drive the brute away by shouting and by throwing at it bits of earth and fragments broken from the buffalo-skull.

But the "fissi" does not go far. It keeps circling round, howling for hours, kept at a distance by our shouting—a strange dialogue between beast of prey and human being in the lonely wilderness!

The hyæna's getting so near has reminded me of how noiselessly lions and leopards could steal upon us, and vividly does the imaginary picture paint itself over and over again in my mind's eye. But once more the pangs of thirst overpower every other feeling. My temples throb, my heart beats quickly and violently. Amongst the thousand thoughts and fancies that crowd feverishly through my brain, *one* thought is ever foremost: water! water! What would I not give for a glass of water! I feel I would willingly give a third part of all my only worldly goods for a draught of water! More than that—the half! No, the whole! Unconditionally! Cool, rushing streams, water-nymphs, and a thousand such apparitions does the tortured brain conjure up for itself. But all is in vain,

and I must thirst on—thirst on, like my black companions, who brood upon it all in dull resignation. . . .

The pulse-beats grow ever weaker, less perceptible, and faster ; more agonising grows the thirst ; we ourselves more lethargic. . . .

The only useful possession at this midnight hour is one's *weapon*, and the knowledge that in these circum-

A FLOCK OF SACRED IBISES FLEW RIGHT OVER MY HIDING-PLACE

stances one must crush down one's feeling—must set the coloured men an example of patient endurance of thirst, although their sufferings are not nearly so great as mine.

Thus drag and linger the slow hours. The hyæna remains on, but in the end we scarcely notice it is there. As if everything had conspired against us, the sky, here in the proximity of the mountain-range, remains clouded and dark. The temperature keeps hot and

sultry; the burning heat, which the soil has absorbed during the day, is undiminished—there is no dispersal of it through the atmosphere.

Ah! there at last sounds a well-known voice from the throat of a bird; a little flying minstrel greets the coming morn with soft twitterings. Darkness goes at last, and at last (though still without an idea of the right direction) we can move onward! After hours of this, after climbing trees to try to get our bearings, we at last find a dried-up river-bed which leads to our camp. Breathlessly we follow its course upwards, and the first little drop of water that we come to in the brook-bed affords us at last the longed-for refreshment.

To resume, the rhinoceros-track leads me now into an entirely arid part of the desert, apparently devoid of any of the higher forms of animal life, and takes me, hour by hour, further from the camp.

Sometimes the rhino has taken its toll from the thorn-bushes *Salvadora persica* and the taparidal, and has also rooted up some prickly aloes; but apparently it was already fully fed when it took itself into the wilderness, and was chiefly occupied with the thought of its safety. There are a dozen places on the way where I might come across it—where the ranker plants grow in the torrent-bed, or in those oases where the *Vernonia* and "mpele-mpele" bushes grow . . . it may appear close before me, snorting, at any moment.

The wind is still favourable; I do not abandon the pursuit; a trail does not often last so well and yield so much possibility!

Now we come upon two sand-grouse (*Pterocles exustus*) which rise far from the water in front of us, but soon plunge in again not far off with a splash. But where has the long-sought pachyderm got to? The sun's rays have already begun to slope westward when suddenly, on a very open space under a little acacia-tree, the rhino becomes visible. It has settled down, according to its custom, with

A WHITE-HEADED SEA-EAGLE

its hinder parts close against the trunk, and its head forward. Now for a test of nerves! Accompanied only by my most trustworthy followers I approach the beast as cautiously as possible, and as it happens, for a wonder, not to be beset by ox-peckers, I succeed in getting up to within sixty paces. If at such moments one looks behind to give the gun-carrier a whispered order of any sort, it is intensely interesting to observe his staring, excited face, which has

all the greater effect upon a European because, in such circumstances, the white of the eyes stands out in the most extraordinary way against the dark skin.

The rhinoceros slumbers on without a suspicion of danger. The novice might take it for a white-ant hill, and the powerful horns for broken, dry branches. The colouring of the animal, which has rolled itself several times in the dust of the desert during its journey, is perfectly toned to its environment; the pointed ears keep shaking off the persistent little flies, and thus betray the fact that the colossal creature is alive.

The animal is usually tormented by a very small, stinging blow-fly (which probably represents a new genus, most closely related to *Lyperosia*) discovered by me in the year 1903.

In the year 1899 I had already found the Mto-Nairobi rhinoceroses terribly tormented by ox-fly larvæ, which, in the form of a hitherto unknown species (*Gyrostigma conjungens*), accomplished their metamorphosis to the number of several hundreds in the stomach of the beast they infested. When one remembers that these disgusting parasites grow to an inch and a quarter long and half an inch broad, one can understand how much the rhinoceroses must suffer.

My rhinoceros has not yet noticed the approaching enemy. I take another look at my rifle; it has long been loaded and in order; and nothing has come between the sight. Lit by the oblique rays of the sun, the great wild beast affords me an easy aim; but it must not be able to reach us for any kind of attack before falling dead, since we

C. G. Schillings, phot.

I DID NOT SHOOT VULTURES, SO THEY SHOWED NO MORE FEAR OF ME THAN THEY DID OF THE NATIVES, WHEREAS THEY FIGHT SHY, OF COURSE, OF THOSE EUROPEANS WHO GO ABOUT SLAUGHTERING EVERYTHING

have no covert of any description. On the other hand, it shall not be murdered in its sleep, so there rings out a short, loud cry from me. How unfamiliar sounds my own voice to me in this tremendous solitude! As if struck by lightning, the rhinoceros leaps up with incredible rapidity, his ears pointed sharply forward, and offering me, half-obliquely, a good aim.

My shot rings out! Puffing and snorting like a steam-

ORGEICH BUSY PREPARING ORNITHOLOGICAL SPECIMENS—NO EASY TASK, VERY OFTEN

engine, the beast flings himself round twice in a circle, seeking for his foe. But already my rifle has spoken for the second time, and simultaneously with the sound the mighty beast succumbs; in the death-struggle the heavy head falls with a thud once or twice upon the stony ground of the desert. Cautiously I approach my fallen prey; the little, blinking eyes induce me to administer a

death-shot in the ear, and feeble signs of the life which is still present are betrayed, as I expected, by this means.

I have the skin of the head drawn off, but the horns have to be detached, a task in which my axe and side-arms do good service. At the least, an hour is required for the detaching in correct style of the two long horns, which are very thick at the base. The carriers load themselves anew with the best bits of flesh, and then the march back to camp is begun. This is reached some time after midnight; my pedometer testifies to some 72,000 paces—a good performance in view of the climate, and only possible for those who have been in the country some months.

In the dawn of an October day I once more leave the camp with a number of my men to ascend the higher tracts of the Dönje-Erok in its southerly division. For some time I have been encamped at "Ngara na Lalla," in the Masai district of Matumbato. We follow the brook for a long time. Then a pathless road leads through the slowly ascending foot-hills, intersected by dried-up torrent-beds, to the foot of the hills which lie to the south of the gloomy Dönje-Erok. There are numerous tracks and traces of animals which have watered at the brook during the night, and now have retreated again into the wide desert. Little herds of Grant's gazelles, Thomson's gazelles, and impalla antelopes run off here and there; and I also come upon two or three pretty red-coloured antelopes. These are steinbok (*Raphiceros neumanni*), which, exactly matching the red soil of the district in their colouring, let us come up very close to them before, cutting many capers,

C. G. Schillings, phot.

they suddenly take to flight, soon to disappear in the dry desert grass. The firmament is clothed in cloudless blue; the day will undoubtedly prove oppressively hot. The animal world is awake all around us, and especially near the brook. We turn out a pair of the immense ground-hornbill (*Bucorvus caffer*), the "ol munguk" of the Masai people, then a crowd of francolins, and also two large coveys of guinea-fowl. In rising, these latter utter their indescribable, peculiarly metallic cry. The wise creatures soon plunge into the depths again and run off into safe quarters with surprising rapidity. The rest of the bird-world is also most actively busy; the air is thick with doves of different kinds; the gurgle of the turtle-dove, called "ndurgulju" by the Masai people, fills the air; strong coveys of sand-grouse fly very quickly over our heads to their drinking-places, or, already having drunk their fill, go back into the desert. The bushes near the brook are alive with the humming and chirping of legions of little red Kaffir finches, which find here lots of water and a generous feast of ripe grasses.

My attention is now aroused by some curious birds, which turn out to be wood-hoopoes (*Irrisor senegalensis somaliensis*), the "el gononi" of the Masai people, whose shrill laughter, resounding through the bush, is answered by the characteristic note of the yellow hornbill (*Shizorhis leucogaster*). At a distance of two hundred paces we now perceive three of the great Kori bustards (*Eupodotis kori*). They peer at us timidly and cautiously, making off with slow, measured pace, and with peculiarly

stiff bearing. But when, hastening our steps, we get quite near to them, they take to flight. They begin by running along the ground, but then, despite their heaviness, they sail through the air on their mighty pinions with surprising lightness, and get quickly into shelter.

But none of these creatures can arrest me in my march to-day. Only here and there do I delay a few minutes to observe some animal which particularly interests me. Thus my attention is caught now and then by pretty dik-dik antelopes (*Madoqua kirki*) gathered together by twos or threes.

After two hours of wandering and the negotiation of a great many steep torrent-beds, often more than thirty-five feet deep, there suddenly appear in the rocky and thorny ground belonging to the hills which fringe the mountain-shelves, two greenish-grey antelopes, whose aspect forms a striking contrast to that of their fellows of the plain. These are the pretty little mountain antelopes, which take the place of the chamois in Africa—the klipspringer, called by the Masai "n' gnossoiru."

The only European form of the antelope—the chamois—is not found in Africa; the beautiful ibex, moreover, has only two representatives in the north of the continent. But widely dispersed over the Dark Continent is the hill-climbing klipspringer, with its curious hard-grained, stiff-haired pelt.

The klipspringer demands most strenuous stalking from the hunter, and therefore fascinates him. This peculiar animal is found in many phases, and as those brought me from the Masai desert proved to be unknown to science,

C. G. Schillings, phot.

PREPARING THE HIDE OF THE FIRST BUFFALO I SHOT

Oscar Neumann has described them, and named them *Oreotragus schillingsi.*

These dwarf antelopes live in little parties of from six to eight, and also in pairs, both on the rugged mountain-slopes and sometimes in the caves of the high desert, and anywhere that heaps of rocks and stones, and even lava blocks, make suitable country for them.

In Abyssinia klipspringers have been found at elevations of 10,000 ft. How high they climb in the East African mountain-chain I cannot say ; but wherever rugged heights are interrupted by steep valleys, and wherever a meagre thorny flora grows amid rocks and stones, there is the home of the klipspringer. Like india-rubber balls, apparently flying rather than springing, the graceful creatures move from rock to rock, now stopping still for some time with closely-gathered limbs, anon disappearing like shadows into their mountain strongholds with a clear whistle of warning, soon to emerge again on a fresh post of observation, to watch the disturber of their mountain peace. By a curious chapter of accidents my photographs of these lovely animals were all damaged except a few which may serve to give some idea of the pretty creatures.

To-day the klipspringers are particularly shy, and elude me continually in the dry grass. Only one buck, in its flight from my men mounting up from below, suddenly comes my way, and, while it peers down on me a moment from its rock, gives me the chance of a shot. My bullet hits it at a distance of almost two hundred yards across the valley. I send two trusty carriers back into the camp with the booty ; and there

the skin has to be prepared with the greatest care, for the hairs grow so loosely that, with the least inattention, they are sure to come out.

Now we have to work up the mountain-slope, often painfully in the burning sun, on hands and feet. The rocks are already quite hot. Lizards and geckos eye us curiously, instantly disappearing in the grass or in holes. The higher we climb the more plants and grasses we find that are not entirely withered by the sun. The eye of the hunter soon perceives among the rocks great accumulations of dung, the nature of which tells of the presence of numerous rock-badgers. And, in truth, this mountain wilderness is thickly inhabited by those miniature hoofed animals of which the Bible speaks, and which zoology has, oddly enough, to class as relatives of the mighty rhinoceros. . . .

Fate has arranged things very differently for these incongruous cousins. Thanks to their size and strength, the rhinoceroses ruled their broad lands for hundreds and thousands of years; no foe of equal girth challenged them in the struggle for existence. But at first, with the help of the poisoned arrow, and nowadays with the help of little bits of metal only some few millimetres in size, which are landed in the body of the beast from a long distance, man has succeeded in well-nigh decimating this leviathan; and soon he will have annihilated him!

And thus the poor relations of the rhinoceroses, the rock-badgers, who live in inaccessible rocky deserts, have had a better destiny. Living like rabbits, multiplying endlessly, timid and cautious—the old ones, at any rate,

putting the sportsman's patience to the hardest proof—they will survive for long ages the last rhinoceros on earth—perhaps even the human race. . . .

This small game is not particularly interesting to the hunter, unless he tries a shot at one of the old fellows warming himself in the morning sun. If, in the pursuit of a zoological collection, one wishes to obtain a large

A WELCOME POOL OF YELLOW WATER WHICH WE REACHED AFTER GOING TWENTY-FOUR HOURS WITHOUT A DRINK

number of specimens of various ages, then, armed with an ordinary shot-gun, one must be ready to sit still for hours—for hours may indeed elapse before the experienced old animals will leave their hiding-places and expose themselves to the gun. And when the game is hit, it must be dispatched before it can reach its rocky lair, for otherwise it is irretrievably lost to the hunter.

Thus the hunting of rock-badgers seems to me to

have many points in common with marmot-hunting in the Alps. Like marmots, the rock-badgers seek the more low-lying parts of the desert in the rainy season. In the dry season of the year they return to their mountain-haunts, where they then always find some nourishment, even though it be meagre, in the grasses, leaves, and bushes. The rock-badger pays great heed to the warning whistle of the klipspringer, and one sometimes sees the two species living in the closest proximity, and evidently in friendly relations.

I have constantly noticed how the tawny eagles (*Aquila rapax*) make war upon the young rock-badgers. On the appearance of one of these eagles, which haunt the slopes of the mountains, the rock-badgers disappear as quick as lightning, and stay a long time in their warrens. They have also certain hiding-places in the rocks which offer complete security, and into these they retire in numbers at the approach of danger.

Farther and farther upwards does my way lead me. The heat grows ever more intense, and very wearisome it is to make one's way up the mountain through the thorn-wooded valleys. But at last we have reached the ridge of the first chain of hills, and already a wonderful prospect is opening over the vast wilderness. At our feet, in the middle of the ash-coloured velt, lies a long green strip—it is the course of the stream near which I have pitched my camp. Far in the distance, in the direction of its lower course, the presence of those periodic swamps—formed by the streams in the rainy season—is indicated by the reed-thickets, now yellowish and dry,

which occur in a long, deep depression of the desert surface. Over them, near them—everywhere, indeed, that the eye can reach—the infinite desert shimmers in the throbbing light.

The whole vast region lies in a dazzling glow, intensified by the hot waves of air that ascend from it. Over and over again experience and common-sense have

MY CARRIERS INDULGE IN A WASH

to be called in to correct the delusions of the eye, which constantly deceives itself with regard to the perspective. For instance, while the eye supposes itself capable of seeing herds of game down there, as a matter of fact, we can scarcely make out with the naked eye the big surfaces of our tents below us in the camp—we can only see them with the glasses. It is important that the tents should stand out well from their surroundings, so they

are stained with green oxide of copper. A herd of elephants would barely be visible in their neighbourhood. How small and helpless does man appear in the midst of such stupendous manifestations of nature!

Never have I known a peace more deep and sacred, never have I felt so intimately the beauty and the essential harmony of nature, as on the mountain-heights of the Masai-Nyika solitudes. Certainly I did not see in these forests the gorgeous violet-coloured beds of flowers which I found in the woods that girdle Kilimanjaro; but, on the other hand, the trees, all overgrown and hung, as they were, with ferns (*Hymenophyllaceæ*), mosses, and garlands, presented a spectacle quite as remarkable. Next to the impenetrable bamboo-forests of another part of Africa, I have not been so impressed by anything as by these groves of trees, with their garlands of whitish, spectre-like lichens. Volkens declares that these parasites in many cases kill the supporting tree. . . .

But we may not long indulge in reflection. We are now on the ridge of the foremost mountains, and our next business is to penetrate into the actual gloomy mountain-tracts—more practicable from here on account of the elephant and rhinoceros tracks—of the Dönje-Erok, which is two thousand feet high. So it is a question of straining every muscle. Streams of sweat must flow before the goal is reached. No other European has sought these silent mountain-forests before me; only Count Teleki and von Höhnel, long years ago, encamped at the foot of the mountain on their memorable journey to the Rudolf and Stephanie Lakes. Doubly attractive, there-

fore, doubly desirable and full of promise, does an exploration of this mountain-world, and its secrets, appear to me.

On our right there stretch out long, grass-grown chains of hills, broken by steeply cut, dried-up stream-courses. Again we come upon a species of antelope which is not found in the desert. First one, then two,

MEERKATS

and now a fourth specimen, are put to flight by us. All four antelopes were feeding openly in the valley when our appearance there surprised them. These were the handsome, curiously coloured mountain-reedbuck (*Cervicapra chanleri*), a species distinguished by unusually long tails, and in full sunlight looking almost white—a type of antelope whose discovery in East Africa by myself was anticipated only by the American traveller Chanler.

A brace, consisting of a buck and a hind, adds two splendid specimens to my collection. Scarcely a single European museum has hitherto been able to boast of the possession of one of these antelopes, though in certain high-lying parts of the East African mountain-country they are by no means uncommon. Again I detach two carriers from my caravan for the transport of the game. With the others I now proceed south, in the direction of the highest peak of the mountain-chain.

After half an hour my eye discovers beneath our look-out, in a depression of the valley, some living creatures standing out plainly from the grassy ground, and I soon recognise them as elands; but these fine antelopes would take me too much out of my way. So we go forward, often coming again upon klipspringers and mountain-reedbuck; and in one of the valleys that we scramble through we perceive for an instant two fugitive bushbuck among the thickets.

As soon as we have obtained a view-point on one of the commanding, lofty, naked, rocky ridges, we see the Dönje-Erok's own ridges stretching out before our eyes, falling steeply towards the velt on the south, but in the north-west descending in a series of gradually lower hills, furrowed all over with valleys, and with many well-wooded heights. Two streams flow down to north and east—both soon to disappear in the desert at the foot of the mountain. The traveller must clamber over the mountains for weeks before he can get any sort of idea of their actual conformation.

As, following the mountain-ridges, we stride through

close, tall underwood, we come at every step, as I had expected, upon the haunts of the rhinoceroses. Suddenly some huge animals rush off suddenly, to my utter amazement, through the thicket close by; and my rifle-bearer calls out behind me:

"Umbogo, Bwana!" ("Buffalo, sir!")

But they are not buffaloes (although in similar high

A SECRETARY-BIRD ON THE VELT

regions on other hills of the desert I have found quite fresh buffalo-skulls); they are again elands. This time I succeed in slaying a fine bull out of a herd of several. On receiving my shot he springs into the air from all four feet, but succumbs after running a few paces, and gives us the opportunity of adding to our commissariat a liberal provision of excellent venison.

Eight carriers are chosen to take the skin and the

horns back to camp. I have quite enough carriers—about twelve men—left with whom to continue my march and the exploration of the peak-forest, so that I need not burden myself with the kill. But, strangely enough, I now come—while marching at the head of my servants and carefully picking my way through bush and branches—almost directly, and quite unexpectedly, upon the first rhinoceros, a bull, rising from his lair about thirty paces in front of me! I can only see the head and horns. The animal is standing motionless, trying to investigate the approaching foes, for the wind is in our favour.

I did not expect to put up a "faru" so immediately after my shot at the antelope! Of course it was lying in a hollow, and the thicket surrounding us may well have entirely deadened the sound of the gun, or else the rhinoceros mistook it for thunder.

Instinctively my people stand as still as pillars of salt, for I make no movement, except the lightning-quick snatch at my rifle. Then the "faru" flings round; it escapes to the mountain-slope with a clatter, and we see it no more. I had no intention of killing it, nor did its very ordinary pair of horns especially tempt me. But more carefully now we take our way, step by step, through the thicket, looking out most cautiously, and straining our ears to the utmost.

Soon we come upon a whole lot of fresh rhinoceros-lairs, hollowed out from the ground like ostrich-nests, and often showing traces of recent use. Most rhinoceros-lairs are found under shade-giving bushes, but

some are quite in the open; these latter are used chiefly when the sky is clouded and the temperature cool.

Now we have to be very careful with each step we take. Every animal that gets up before us now—bush-buck are tolerably frequent here—of course makes us

AN EARLY MORNING PHOTOGRAPH OF WATERBUCK, CURIOUSLY LIKE EUROPEAN RED DEER AT A DISTANCE

stand still with bated breath, until we are sure that it is not a rhinoceros.

When the undergrowth thins a little, we can proceed with less caution. But we come again and again, on these mountain-ridges, upon thickets in which, as I have said, any number of rhinoceros-lairs are to be found. The thickets are much grown over with the woodbine (*Clematis sunensis*)—called by the Masai "ol orianene"—whose feathery, white-flowering standards

are to be seen everywhere. Very frequent also are some different kinds of *Compositæ*, much liked by elephants, and a leguminous plant, beloved of tree-badgers, called by the Wandorobo "mukuna."

Wherever there is an open outlook we can see the silent, mighty desert, glowing in the sun's rays, at our feet. Above our heads the tall trees arch, decked

ORYX

fantastically with those long, waving, white garlands of lichens. Rest and holy calm prevail in these dark mountain-forests.

Even the bird-world is but sparsely represented, and, besides bushbuck, it is only now and again that we see anything of the antelope family—such as those quaint dwarf members of it, the duikers, mostly belonging to *Sylvicapra ocularis*, with their fabulously long ears.

Standing motionless, they peer for a moment from the undergrowth at the intruders, and then disappear in the thick scrub.

Now we hear a snorting beneath us in an open space in the valley. Two rhinoceroses, which have evidently marked our approach for some time, but have lingered to investigate us thoroughly by means of their sense of smell,

VULTURES ON THE WING

break out, snorting like steam-engines, and at first make directly for me, but then suddenly swerve, so that they go crosswise over our path, and disappear in the valley at the other side.

Both monsters go raging thus over a perfectly open clearing, not further than fifty paces from me, lifting up their heads, which are ornamented with two enormous horns, and tossing them continually from side to side.

have many points in common with marmot-hunting in the Alps. Like marmots, the rock-badgers seek the more low-lying parts of the desert in the rainy season. In the dry season of the year they return to their mountain-haunts, where they then always find some nourishment, even though it be meagre, in the grasses, leaves, and bushes. The rock-badger pays great heed to the warning whistle of the klipspringer, and one sometimes sees the two species living in the closest proximity, and evidently in friendly relations.

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other two creatures! Some seconds thus elapse, in the most terrible suspense. Again there is a crashing noise in the thicket before me, but neither of the two monsters attempts a fresh onset; on the contrary, both of them clatter away to the right into the valley.

A number of my men, despite the dense undergrowth, had vanished, as if swallowed up by the ground. Now they come creeping back from all directions, consternation on every face, and they try to persuade me that it is impossible to go on, since even the Wandorobo and Wakamba dare not penetrate farther into the bush. But I persist in my intention, and we press forward as soon as the horns of the dead rhinoceros have been detached. The rhinoceros family evidently consists of a cow, an already well-grown youngster, and the bull that I have slain.

I now attempt another method of pursuing my way unmolested. I try to keep away the rhinoceroses, firing rifle-shots here and there into the bush. This succeeds for a while, but in such circumstances every cartridge is priceless. Moreover, I am attacked again, after two more hours, by three rhinoceroses, and this time in a most unpleasant fashion. The beasts, which had already come out of their lairs, allowed us to approach almost within touching distance. And I certainly must attribute my salvation solely to the fact that the wind was most favourable to us, so that I succeeded at the last moment in stretching two of the brutes on the ground, with a shot in their necks, while the third, by great good luck, was put to flight.

C. G. Schillings, phot.

A HERD OF ZEBRAS—THE LEADER OF THE HERD, A STALLION, IN THE CENTRE

But this time I could not prevent the four armed Askaris who were with me from likewise firing off their rifles in their terror, and after that my people would not stir a step further with me. Curiously enough, I was able to point out to them distinctly, on the carcases of the rhinoceroses, that their Mauser bullets had entirely missed their aim ; only one had hit, but too far back, and not on a vital part.

I frankly confess that my own nerves somewhat gave way, and that a certain fury against the pachyderms took hold of me. These feelings were coupled with one of distress at being obliged to slay so uselessly, and therefore I sought in one of the wooded, brook-threaded valleys a place to sleep for the night. To my surprise, clouds had been gathering for some time—for even in the dry season this lofty chain of mountains can condense a certain quantity of moisture. Suddenly there splashed down from the gloomy pile a short but heavy local shower, which did not, of course, fall upon the thirsty velt, but only on the high peaks of this mountain-region.

As suddenly as the rain began it has ceased. A big fire is kindled from a lot of dry twigs, and I enjoy a refreshing bath in a pool formed by a forest-stream, and shaped like the arena of a circus. But the first thing to be done is to destroy in different ways the rhinoceros-tracks, which cross each other from every side of the valley. This is achieved to within some hundred paces of our encampment, and everywhere around the Wandorobo who are with me cast their spells, to keep away rhinoceroses and other animals at night.

A frugal supper, which tastes very good after all the exertions of the day, is prepared from the flesh of the eland roasted on the spit; and refreshing sleep soon embraces myself and the men who are not keeping watch. Up here, in the pure air of the mountain-forest—very different from that of my camp on the fever-breeding velt—one sleeps doubly well. But not less than three times in the night we are all awakened suddenly by the snorting of rhinoceroses in our proximity. We spring up, and a long time elapses before the angry pachyderms disappear, still uttering snorts that echo hideously through the forest.

The next morning sees me returning to the camp by a different path. This time we climb down to the valley by the southern declivities of the mountain-chain. Rock-badgers and klipspringers are visible, also two huge herds of baboons; and now that I have no longer any desire to shoot antelope, the birds afford me many a fine specimen for my collection. Gorgeously coloured turacos, in particular, scuffling in the foliage, are soon added to my spoils.

When, half-way to a rocky plateau, I halt and investigate the desert below me with a Goerz-Trialder glass, I perceive numerous little dots, which prove to be large herds of wild animals. When we come some hundred yards nearer to the foot of the mountain, great crowds of gnus, zebras, and impalla antelopes come out for the midday drink, and allow me, now that I am not hunting them, to pass within a few hundred paces.

More than once I have made incursions into the higher regions of the Dönje-Erok la Matumbato, but

C. G. Schillings, phot.

SIX KLIPSPRINGERS DOWN ON THE PLAIN, 700 FEET BELOW. ON THE GROUND NEAR THEM IS THE TRUNK OF A TREE. THE BRANCHES OF A BUSH IMPEDE THE VIEW

at last I have abjured it. It is too painful for the sportsman to have to proceed like a murderer for the sake of his own safety, yet if he did not he would unquestionably go to his certain death in these thickets!

Elephants enjoy a kind of indirect protection, which even the expert would not suspect. It happens in this way. The rhinoceroses—which, according to all the

I GOT MY MEN TO FILL UP WITH THORN-BRANCHES AND TWIGS MANY OF THE MURDEROUS PIT-FALLS IN WHICH THE NATIVES ENTRAP THE ANIMALS

natives, are by no means friendly towards elephants—continually baffle the elephant-stalker by their frequent presence in mountain-forests of the desert. For a single shot thunders through the hills and breaks into manifold echoes, and this is enough to set the wily elephants moving about noiselessly in all directions and setting many miles between themselves and their pursuers.

In the rainy season you will scarcely come across a single rhinoceros on the mountain-plateau; they are then scattered about the velt. But in the dry season it is almost impossible to penetrate into the thickets of that hill country, as the description of this stalking expedition of mine shows very plainly. I should never have dreamt that it was such a veritable rhinoceros-preserve; but for well-read zoologists this information will not be in the least surprising, for they are all conversant with the descriptions of Thomson, Count Teleki, Chanler, Donaldson-Smith, and, to close the list, von Höhnel (who was attacked by a rhinoceros and badly injured). These and many other travellers came across almost incredible numbers of rhinoceroses in certain districts. Everything here recounted by me of the Dönje-Erok applies to all the corresponding mountain-ranges of the Masai-Nyika and Ndasekera, and the Dönje-Erok la Matumbato is by no means especially rich in "faros."

How quickly, though, these conditions may alter is most strikingly exhibited by the fact that so keen an observer as Professor Volkens never came in contact with a rhinoceros, in a stay of almost two years on Kilimanjaro, although his botanical excursions took him all round the mountain.[1] Some years before his time the first commandant of Moshi, Mr. Eltz, had killed two-horned rhinoceroses by scores. And since then the Government Askaris had snared this great wild beast for years in their hunting expeditions.

[1] Volkens, *Der Kilimandjaro.*

"PORI"

XXVIII

Night-Shoots

IN an earlier chapter I have already given some reasons why night-shoots in Equatorial Africa have in them much to deter the hunter, enticing as they may seem in Europe.

In many cases it is not possible to arrange a "raised ambush" in trees, and many wild animals—sometimes even lions—are too timid to approach closely an "ambush" which is right down on the ground; so that the sportsman is altogether too dependent on the way the wind is blowing. The attacks of insects of various kinds, above all of ants, are another horrible nuisance. Nothing in the tropics is more weakening to the body, and more likely to expose it to the attacks of fever, than the loss of one's most necessary night's rest. All the same, I advise every one who is entering upon the study of animal life, to undergo once or twice the infinite hardships of a night-shoot, for the sake of its fascination.

Yes, such an adventure has, indeed, an indescribable fascination. Far from the camp, in the moonlit, solitary wilderness, to dare await the manifestations of the life of these wild denizens of the forest—to what sportsman, just beginning his career, would not this present an irresistible attraction? I have several times attempted the "raised ambush," as well as the ambush in a thorn-thicket. And I have been rewarded for all my troubles, less by the hunting trophies I have secured than by the wealth of observations that I have been enabled to make. I will refer the reader to the most veracious and highly graphic descriptions by Count Coudenhove of his night-ambushes for lions in Somaliland.[1] As he confesses, in simple, straightforward words: "I then learnt what fear really was." That was my experience.

Will the reader, then, follow me and my tried and trusty black companion into my carefully arranged thorn-ambush, the entrance to which is closed behind us by some other servants by means of thorn-branches, and in which we are finally left alone? Three loopholes in three different directions give me openings for my shots. With the coverings we have brought along, we make ourselves as comfortable as may be.

I have selected my position so that I can count upon seeing lions as well as wild beasts of other kinds, even rhinoceroses, going to the water. After a while—the sun is already setting—there appear before us in the dry grass, their heads held very high, three fine, yellow-throated francolins; but the wily birds have

[1] Count Hoyos, *Zu den Aulihans.*

C. G. Schillings, phot.

ONE OF MY MOST SUCCESSFUL AND MOST CURIOUS PHOTOGRAPHS. THE OLD MANED LION, WHICH LOOKED AS THOUGH IT

already espied us, and vanish in a second. Doves, which have come in crowds to roost over the water, flutter ceaselessly here and there, seeking suitable covert in the thorny branches. Now resounds the cry of a little pearl screech-owl; its cadence, almost exactly following the scale, rings out clearly over the now moonlit landscape.

Unfortunately the moon is not at the full. Nevertheless, it lights up the surroundings, in the clear tropical atmosphere, in a way that would only be possible for the full moon in our home latitudes. The uncertain glimmer of a moonlight night dances amid the trees and branches; nocturnal insects hum around; the leaves and dry wood rustle everywhere. There breaks out over our heads the laughter of a family of galagos (*Otolemur crassicaudatus*) suddenly awakened. The tops of a little cluster of trees make an abode for these lemurs for many weeks at a time, and their extraordinary screaming resounds the whole night through.

So time goes by and we wait in strained attention. The big ox, which is tied up quite close to us, has now grown accustomed to its environment; it begins to munch the grass thrown near it, evidently reassured by our proximity. At first it tried several times, with much snorting, to get free. If it had succeeded in this it would have made a bee-line for the camp (which is not far off) and its comrades left behind there; but instinctive sagacity causes it to suppress any lowing and calling to them.

An hour has gone by. At the water a herd of ante-

lopes appears in blurred outline against the dark background of the sedge-thicket. They seem to be waterbuck, coming from their hiding-places on to the open level for food, and they soon disappear in the background. I begin to experience a certain fatigue, but I struggle against it. Nor do I permit any sleep to my companion; the inevitable snoring of the negro (for that matter, even too heavy breathing) might be audible to sharp ears.

Another hour has passed. Suddenly I perceive on my right, not far from me, a large dark object which I had not noticed before, and which is lightly and noiselessly approaching my ambush and the watering-place. Without a halt the dark, mighty mass comes nearer and still nearer. Now I can plainly see that there are two objects, one in front of the other. They stand opposite me, not more than one hundred and fifty paces off. They are rhinoceroses, full-grown ones, coming here to drink. How gigantic they look by moonlight! An old childish memory suddenly comes back to me: how my father's keeper, when he missed some sitting hares, apologised by saying that he always saw them too big!—as big as camels!

Moving along obliquely to the water, they have now come to a spot at most a hundred paces away, and stop still once more, listening—then they go up to the brink, instantly to vanish in the sedge and the marsh-vegetation. For a while I can hear them splashing about; then there is no further sound. It is not surprising to me, but to the new-comer it would be astounding, to observe the perfect silence in which these mighty pachyderms contrive to

move on *terra firma*; the acutest ear could not have detected their approach.

The vague outlines of a small animal, probably a jackal, rise not long afterwards from the ground near the water; and after some time a mournful yelp in the same direction confirms my conjecture. . . . Evidently the anticipated antelope-herd has found out another drinking-place this evening. . . . Hours go by, broken only by the sound of the ox, imperturbably chewing its grass. . . . Suddenly it snorts twice very quickly, as if terrified; a big grey object darts at it quick as an arrow, with a loud clatter, and ox and lion—for that is what it is—are rolling together before my eyes next minute in a cloud of dust!

I have an idea that another lion has, from the other side, joined in the brief tussle. Then there is a rattling and a groaning . . . the ox is lying on the ground, and over it are the two beasts of prey, which instantly begin their meal. But, as if a wizard were meddling with the affair, the moon now darkens over suddenly. All is darkness; and the only sound is the cracking of bones, the tearing and rending of flesh between teeth.

The stillness of the night still reigns all around. Untroubled by the drama being played out down here, a galago breaks out again, yelling and laughing. What does he care, safe in the shelter of his tree-tops, for the struggle on the ground! Mosquitoes, humming and buzzing, are besieging me now; their stings become unbearable. The lions proceed with their meal undisturbed. I am possessed by a peculiar complication of

feelings, compounded of curiosity, suspense, and a thousand confused fancies.

So minute after minute goes by. At last the moon comes out again; and now, since I can make no more new observations, I seize the opportunity of firing on one of the lions. But I have no luck to-day. With the report both lions vanish in the darkness, and I, much depressed, remain in my ambush.

The next hours of waiting are in vain; nothing more happens. Even the usually ubiquitous hyænas seem to be absent to-night, and when the morning breaks I return to the camp, feeling as if broken to pieces, stung all over by mosquitoes, and with that peculiar sensation which unmistakably heralds an attack of fever.

I was not deceived, and for two days I am confined to camp by a bad attack of malaria. On the third day is found the skeleton of a lioness—which I had hit—a long way from the camp. Everything but the bones had already been consumed by the vultures and hyænas. . . .

Many and many a night-ambush in the tropics will be just like this one; and attractive as they may appear to the sportsman at home, he will find he cannot go in for them much in the African wilderness. Certainly I have obtained in this way many an interesting and important glimpse of the nocturnal habits of wild creatures; but shooting at a few paces, from the safe shelter of an ambush, is not a thing which appeals to me much.

FEMALE GRANT'S GAZELLES TAKING TO FLIGHT

XXIX

Velt Conflagrations

EVERY year a large portion of the East African velt is devastated by great conflagrations. Coal-black tree-trunks are seen where the rainy season had left all fresh and green. Everything has been quickly burnt by the whirlwind of flames that has rushed through the district.

At the commencement of the drought you see at nightfall a spot of fire here and there in the distance. The small red glow increases until the whole horizon is ablaze. These are conflagrations in places where the grass is already dried up, perhaps on the slopes of distant hills, which burn night after night like huge bonfires, lighting up the country for miles. Wherever prairies are in Africa this state of things is found. My friend Dr. Richard Kandt, the discoverer of the sources of the Nile, has the same thing to tell us about Central Africa in his remarkable book *Caput Nili.*

When the dryness has become general, the native himself as well as the traveller will often light a fire, so

as to find a way more easily through the destroyed grass. Directly the first sudden rain falls, fresh green pastures appear very quickly.

It is not the case that fires burn with such extraordinary rapidity that neither man nor beast has time to escape, as one often hears related in descriptions of travels. But for hours, days—even weeks—the mighty conflagration will progress, destroying all in its way, whether grass or shrubs; sometimes even bringing giant trees to the ground by the persistent licking of its tongues of flame.

When a great tree has been treated like this it will lie on the hard, dry ground ready for the next year's conflagration. A few days later, if the wind has not been too strong, the traveller will see a complete sketch, so to speak, of the tree and its branches outlined by the ashes on the ground—a strange *memento mori*!

The next wind will sweep all away, and no sign of the great fall will remain.

When the fire burns for hours at a stretch across the plains, then comes the great feast-day for all kinds of animals. And marabous, storks, cranes, birds of prey of all kinds, especially kites, swoop down on the half-burnt locusts or grasshoppers and other small creatures, which now fall to their lot.

You see other birds, too, such as the gaily coloured rollers, various kinds of swallows, the black "birds of sorrow," snatch their booty from the midst of the hissing flames with extraordinary dexterity. These creatures all know by experience that the fire is nothing very dreadful.

C. G. Schillings, phot.

but quite an ordinary occurrence, from which much good is to be got.

The mammals of the velt flee hurriedly from the flames, to come back after a short while to the same

ONE OF MY GUIDES, WHO HAD A WEAKNESS FOR EMBELLISHING HIS COUNTENANCE WITH PAINT

spot, where they find fresh-springing grass, or they burrow in the ground, and let the flames pass harmlessly over them.

It was with the greatest interest that I observed how this African animal world, like Mephistopheles, looked

on the sea of flames as a "friendly element"! For example, the herds of baboons troubled themselves but little with the conflagrations; and I can quite believe that in prehistoric times the anthropoid apes were able to make friends with fire.

This must have been so in the vicinity of volcanoes, when, more frequently than nowadays, they belched forth from the inmost recesses of the earth their burning ashes and glowing flames. Captain von Beringe observed gorillas in the neighbourhood of the barren slopes of the Kirunga volcano, and I know that the "soko," or chimpanzee, makes its home preferably in similar desert spots.

Even within the period during which they have been under the control of man, these fires have destroyed the forests throughout large districts of East Africa, and doubtless many harmful animals and germs of disease therewith. The Government made efforts to prevent them, but the steps taken in this direction were ineffectual. To my mind, Professor Volkens under-estimates the havoc wrought by these conflagrations, which have much the same results in the tropics as they have in Europe.

With a little foresight the traveller has nothing to fear from the fire. When he sees it approaching he has but to ignite the grass all round his camp in advance, so that when the great flames arrive they may find no fuel.

Once, through imprudence, I was caught in one of these fires and nearly suffocated. Owing to the smoke

I was obliged to shut my eyes, and so lost my bearings. I got off with a fright, however, and with nothing worse than singed shoes and garments.

Another time, just as we were hurriedly pitching our tent in the evening, a sudden and violent fire broke out among some dried sedge-weed in the neighbourhood, and it was with the greatest difficulty that we were able to save ourselves and the camp. I lost a large number of specimens which could never be replaced. And it

GRANT'S GAZELLES

so happened into the bargain that, having started our march back to the coast in that time of commotion, I had, for safety's sake, to throw away several hundreds of cartridges. The fire soon got at these and they began to explode!

I often saw single trunks of trees which for more than a week had been smouldering by day, while at night time they burned so brightly that they lit up the darkness like giant lamps.

Often one's face and hands as well as clothes become as black as the branches, stalks, and shrubs, and remain so as a souvenir of the wanderer's journey through the burnt velt, especially when water is scarce and precious, as is often the case.

Whoever has seen Vesuvius in eruption at night can form some idea of the awful and wonderful sight a gigantic conflagration presents from a distance. If you see it from a hill some miles away and watch it as it moves zigzag fashion, burning more brightly here, there obscured by clouds of smoke, you might almost imagine that you were in Europe and that the flashes of light came from some huge railway station.

I can see now before my eyes the picture of a mighty fire that raged for days on a hillside, rushing through the gorges and ravines of the high Longido Mountain, some 6,000 feet high, and lighting up by night as clearly as day my camp, which was pitched at the foot of the mountain.

The steep westerly slopes of the hill make a beautiful picture of wild scenery at all times; when to this view is added the sight of the leaping flames by night time, to the accompaniment of the cries of frightened animals, the whole forms a never-to-be-forgotten spectacle of the African wilderness—the African wilderness, which here, as in other places, at times has such a look of Northern Europe that the wanderer might almost believe himself at home. . . .

The mountain seems alive, and in the wild tumult fantastic ghostly appearances, formed by the clouds of

mist, form an angry-looking circle above. So the flames rage, now hissing, now sighing, as they race swiftly to devour the tall grass. Immense clouds of smoke hide the mountain's summit; but these are suddenly dispersed by great tongues of flame shooting up to the sky, lighting up the whole and making the sharply defined mountain-

GRANT'S GAZELLES MOVING OUT INTO THE OPEN

peak stand clear, towering and majestic against night's black horizon. . . .

The giants of the animal world come to drink at the neighbouring pools undisturbed by the sea of flames; and only a short distance from my camp, dark, half-naked warriors' forms crouch, armed with shield, spear, and sword, as in the old-world battle-songs.

That was the "fire magic" of our dreams, and night after night the lines from "The Valkyrie" rang through

my brain—"At thy command let magical fire-flame spring forth!" While the flames raged up above in the mountain-regions, my soul was haunted for long hours by the figures of the old northern sagas which Richard Wagner, that impersonation of the old German spirit of heroism, has awakened to new life.

Jagdschein

für Herrn C. G. Schillings

zur ~~berufsmässigen~~ Jagd auf Elefanten und Nashorne.

Gültig vom 7ten Juli 1899 bis 7ten Juli 1900

Gebühr 500 Rp. + 300 Rp. = 800 Rp.

Sansibar den 7ten Juli 1899

Der Kaiserliche [illegible]

Verboten ist die Jagd auf: Alles Jungwild, Kälber, Fohlen, auf junge Elefanten, soweit sie zahnlos sind oder das Gewicht des einzelnen Zahnes 3 kg nicht erreicht, und auf weibliches Wild, soweit es als solches erkennbar ist.

Schussgelder sind zu zahlen. 100 Rp. für jeden ersten und 250 Rp. für jeden ferneren erlegten Elefanten. 50 Rp. für jedes erste und zweite und 150 Rp. für jedes fernere erlegte Nashorn.

1 Rupie = 1 Mark 43 Pfennig.

XXX

Hostile Forces

THE untravelled European must find it difficult to realise how natural it appears after a time to have all one's baggage carried for one on the shoulders of human bearers. Most travellers of any experience, indeed, when undertaking long scientific expeditions in East Africa, laden with multifarious and complicated baggage, would prefer this method of transport to the

use of camels. The carrier system is far preferable certainly in the regions over which I travelled, where I found my men zealous and devoted. Each carried his load of sixty pounds or more. There are endless difficulties and an endless amount of detail connected with a caravan of pack-camels.

Few have had so comprehensive an experience with regard to the conveyance of caravan-loads by camels and mules as the late Baron Carlo Erlanger (whose early death is a matter for deep regret); his bold expedition through the south of Somaliland will maintain a place of honour in the history of African exploration; or as Oscar Neumann, during his journey of two years in Abyssinia and Somaliland. And these two travellers found that, apart from all the trouble involved in the loading of this kind of caravan, the way the animals suffered from varieties of climate was a strong argument in favour of carrier caravans.

The camel is an ideal means of transport over the arid desert, but not in countries where the climate varies. Human carriers I found, when properly taken care of, were always ready for the road in the shortest possible time—were willing, unexacting, and, above all, extraordinarily reasonable. Travellers will always be obliged to depend largely upon this institution, for the character of the arid desert country must prove an insuperable obstacle to the railway projects already in progress. The traveller is soon at ease in his mind as to the capability of these natives. Either they themselves know the caravan-routes exactly, or they learn them *en route*, and manage

C. G. Schillings, phot.

THE PICK OF MY ASKARIS, IN CHARGE OF OUR FLAG

to arrive at their destination on the very day appointed, even after journeys of weeks and months.

Of course, my kind of expedition was a different matter. We went into unknown and uninhabited parts of the velt. My most difficult problem was that of our food-supply. Besides his sixty-pound load, his cooking-utensils, and his few personal possessions, a man cannot carry more vegetable food than will last for a fortnight or three weeks. In practice he will generally have none of it left after twelve or fourteen days. Therefore all the arrangements for the journey must be made in such a way that food is always obtainable. Water must, of course, be come upon daily, or at least every forty-eight hours; for the carrier's capability for work depends very much on the temperature, and in hot weather a man cannot carry his load farther than a day's journey without water.

In the good old times people went, according to report, right through the desert depending solely upon the game they killed for food. The servants, camp once reached, swarmed in all directions through the desert in pursuit of antelopes and other game. But though I, too, gave my servants a certain quantity of meat, I nevertheless most sternly insisted that every man should daily receive a corresponding quantity of vegetable food. This—often with the greatest difficulty and expense—I somehow always managed to accomplish. Unfortunately it is not always done by caravan-leaders; but instead, the game is shot down in the most irresponsible fashion. . . .

In the famine year of 1899–1900 this method of mine

involved considerable outlay; for far and near there were no means of nourishment to be had, and I was therefore forced to rely solely on rice—which meant getting Indian rice, at a great expense, a long way up from the coast. This kind of thing makes expeditions terribly difficult for private people. If, on the contrary, harvests have been good, it is not difficult to barter for maize or beans, and so forth, with the natives, and thus to keep the caravan-servants fed.

The equipment and arrangement of a caravan of about one hundred and twenty carriers always means several days of most strenuous labour. The loads must be parcelled out; to every man must be given his set task; the Askaris have to be clothed, drilled, and tested in every way. So day after day goes by, till at last all is apparently ready. The least negligence in the equipment of a caravan will sooner or later avenge itself on the road, probably far from all human help. My complicated and multifarious photographic equipment—the chemicals, instruments, and many other things demanded a most careful disposition of the most trifling details. In many cases I had to carry double supplies, in case a load should be lost in the fording of a river, or in any other way.

Now at last, however, the "Safari" starts forth into the desert—at first by short marches, so as to accustom the carriers, but gradually increasing to thirty kilometres and more in the day. Many troubles have still to be gone through. A certain number of carriers always, during the first few days of the expedition, lay down their loads upon the caravan-road and dash into the bush with

C. G. Schillings, phot.

PROVISIONS

the earnest-money which they have already received. These "wapagazi" have to be replaced—but, if possible, the fugitives should, for discipline's sake, be pursued. At last, however, there emerges from the gross number of recruits a body of servants who are useful and trustworthy in every respect, and who prove themselves equal to the manifold hardships of the expedition. The traveller now comes daily into closer and closer relation with, and soon dominates, a number of men who are devoted to him and obedient to his slightest gesture. It was a matter of much satisfaction to me that I was often able to re-engage a number of my old servants, whom I always found willing and ready to come with me.

One of the chief difficulties of a zoological collecting-expedition lies in the troublesome task of taxidermy, especially in the case of the larger specimens. Often the entire camp has to spend several days in the preparation of the skins of buffaloes and giraffes, elephants and rhinoceroses. When at last sufficient material has been stored, it has to be packed in loads with the most anxious care, ticketed, and finally—after very serious consideration of the probability of a wet spell occurring on the way—sent to the coast. Laden with reserve stores and supplementary loads the carriers then return to the velt—but often not for weeks and months.

In all these matters one must go to work with one's own hands. The carriers, even in little secondary matters, need constant control and encouragement. But, granted this, they work—of course, with the strictest limitation to their own special duties—in the most satisfactory fashion.

The reverses of fortune, for which every traveller must be prepared, will now perhaps begin to come about. The tsetse-fly stings and kills the animals which have been brought along for riding, and a number of the pack-mules; they and the cattle succumb to all sorts of epidemics. But it is even worse when we are obliged to traverse regions in which small-pox, for example, has followed in the wake of famine.

In the year 1899 I was obliged to go through localities in which the "ndúi" had reigned. About three weeks afterwards, I noticed one day in camp that there was on my left hand a little dark ulcer—an inflammation, I was sure, which had been caused by some arsenic-like quality in the stuff used for taxidermy.

I showed it to my taxidermist, Orgeich. "I will tell the Herr what that is. That's the black pock." When I asked him why he thought so, he told me without circumlocution that for some days a carrier, very ill indeed with small-pox, had been in camp. "I would not frighten the Herr," he told me laconically; and that was his only reason for having made no communication to me about this sickness!

This announcement—made in the Rhenish dialect—was anything but agreeable to me. I then ascertained that there really was a native covered all over with small-pox. Of course I had him isolated and put in a thorn-enclosure by the river, impenetrable to beasts of prey; and, surprisingly enough, there was no other appearance of the disease in the caravan. When a doctor, later on, examined the patient (who was then cured), he confirmed my diagnosis.

But I had worse experiences—dysentery, for instance, breaking out badly among the natives. It is terrible when this frightful disease spreads through a camp. It appears quite suddenly, perhaps through some infected water which has been too unrestrictedly used; and even Europeans can only partially protect themselves from it through careful boiling of their drinking-water.

Twice have I myself suffered from dysentery, and know from experience how difficult it is to achieve a radical cure, and how hard it is for any one to avoid errors of diet during the convalescent period. Dysentery is justly more dreaded than malaria.

If the disease breaks out among the natives, it may, in certain circumstances, endanger the whole expedition. For weeks one has to do without the services of one's most useful men, and there are deaths within a few days. "Amekufa, Bwana!" ("He is dead, master!") announces the caravan-guide; a grave is shovelled out in the vicinity, and there is a hasty burial—haste is imperatively demanded by the conditions of temperature.

In one instance I was only able to check an epidemic of this frightful disease by altering in all haste my whole plan of campaign, and seeking for new watering-places. I have seen some remarkable recoveries. While two doctors, who happened to be staying in my camp, were treating one of my most useful servants, he got no better; at last he refused all European medicines, and got well, after having lived for fourteen days on nothing but weak tea!

Malaria is another great hindrance. Near the caravan-

routes, and in the vicinity of the populated neighbourhoods, my people suffered much oftener and more severely from malaria than on the velt, although this latter is very unhealthy for Europeans and for inhabitants of the mountain-regions. At certain camping-places, ten, twenty, or even more, among my servants would suddenly fall sick with malaria, which, however, they usually got over in a fairly short time.

The opinion is wide-spread in Europe that the natives do not suffer from malaria. This is not only not the case, but the dwellers in the mountain-regions are liable to very severe attacks when they go down into the plains. I have seen the greater number of a band of Wadshaga men who were sent down to the plains for lime-burning, suffer quite unusually badly from malaria when they returned home again after some days' stay in the lowlands, and a great number of them succumbed within a few days.

In the famine-year of 1899, I could not obtain Wapare, inhabitants of the Pare mountain-chain, at any price, to carry my zoological specimens to the coast, although the people were eager to earn something. They even declared themselves only prepared to take my loads to a certain point near the coast; the sight of the sea, they said, would mean death to them! This fancy was not without a certain foundation in fact, for everywhere the highlanders are liable, as has been said, to frequent and severe attacks of fever when once they descend to the plains.

Injuries of various kinds, feet-troubles especially,

C. G. Schillings, phot.

A ROCKY PASS

hurts of any sort on the shins, disable the carriers from time to time. But, in general, wounds heal well and quickly with them, when properly treated, owing to their extraordinary capacity for making "new flesh." Corrosions with carbolic acid prove specially effective for the ulcers in the lower part of the thigh which frequently occur among the Masai men; though these when treated by the native "medicine men," and covered with bark, often have a very alarming aspect.

When the caravan had made a halt and camp was pitched, there constantly arrived a number of patients to ask for my assistance. I cannot remember ever having sent away a single man, although the patience of the traveller, when he is fatigued or ailing, is often put to a very hard test in this way.

"Bwana, kubwa, nakata daua!"

"Master, I should like some medicine!" Over and over again one hears it. And then it is a question of giving aloes to one, and pills to another, castor-oil, ipecacuanha, eye-salve or bandages or something else to a third, while a vessel with antiseptic is always ready for the treatment of wounds and other injuries.

Another dreadful scourge are the sand-flies (*Sarcopsylla penetrans*), which have only recently penetrated to the coasts of East Africa. These parasites were brought some decades ago from South America to the West Coast of Africa. Following the caravan-routes, they gradually spread to the Central African lakes, where I found them in great numbers in the year 1896. The tiny little sand-fly penetrates, at first unnoticed,

[illegible] the toes or fingers, gradually swells to the size of a [illegible] and propagates itself if not removed in time, in great numbers, till at last the limbs which have been attacked putrefy and fall off.

In every region where the sand-fly occurs, many natives are to be seen who have lost a toe, or perhaps all their toes, and have to go about on crutches. It is astonishing how little one notices sand-flies at first, and how quickly when they have been removed, all traces of the hollows they made in the toes disappear. The "Fundi va funda" (in English, "Sand-fly doctors") are very clever at removing them almost painlessly by means of little sticks. The sand-fly settles not only on human beings, but also on monkeys, dogs and other beasts.

It appears to me worth investigation whether the parasite, when once spread all over the country, may not have a fatal effect upon the existence of many wild animals. Even my young rhinoceros was attacked by sand-flies, and it required no little patience to keep it free from the dangerous parasites during its siesta.

Since the year [illegible] the sand-fly has extended its operations with alarming rapidity, and it is now to be found everywhere on the East Coast, and not seldom in the interior. Camping-places where my caravan stayed for any length of time often became infested to such an extent that I had to quit them on this account.

I continually hear the opinion expressed that Europeans can protect themselves against sand-flies by wearing

high-legged boots. As if these tiny pests could not easily crawl into the boots from above! Here and there, in spite of all my precautions, I have found them on my own body. But my worst experience of them was when I was confined to bed for a long time after a heavy attack of fever; no less than seven sand-flies, as large

A PARTY OF NATIVES

as peas, were removed from my toes by one of my black boys

Dogs and monkeys in captivity are very skilful in relieving themselves of these odious pests; but they always get infested again.

During my many years of African travelling I have never had much trouble from flies—with the exception of the tsetse-fly—and never found the fly-pest in any way so distressing as in some places on the Somali Coast.

Certain kinds of stinging-flies are very prevalent during their swarming season. The flies and dragon-flies of East Africa have, for the most part, been but little investigated. From my last tour alone, I was able to bring home two new kinds of stinging-flies, hitherto entirely unknown. Undoubtedly the most distressing for human beings is the tsetse-fly, which is positively fatal to horses, mules, and asses, and which appears at a certain time of the year. I cannot confirm the idea that certain parts of the velt are free from the tsetse-fly. Though the high plains are free from it, I found the tsetse remarkably prevalent in localities where it had not hitherto been suspected, especially by the Pangani River in March and April.

A traveller whom I know told me that he once slept in his tent in the daytime with an open wound in his arm, and the day after found fly-maggots in it—an experience, certainly, that I have never had myself.

Troublesome and somewhat frequent visitors to the tent are scorpions. Their virulence is much exaggerated, though their sting always has some disagreeable results. One of my carriers delighted in putting big scorpions, which he used to catch, upon his shaven head, and letting them move about there for some time, amidst the laughter of his comrades!

The traveller often suffers much inconvenience from white ants. If I happened to stay in a camping-place for any length of time, I often found that, even after a few days, the bottoms of my travelling-cases would be destroyed by white ants! Once, ants ate away in this fashion a

whole row of the tickets on my heaps of zoological preparations—and that in a single night!—causing me much loss and vexation.

Nocturnal attacks of ants are very disagreeable. They occasionally attack the sleeper in his tent, gnawing through the mosquito-nets. The wife of a district-bailiff known to me was almost killed by ants

MY CARRIERS

some years ago. On hearing her screams, the blacks snatched her out of bed, tore off her nightdress, and, by rolling her in the grass, freed the unfortunate lady from the rapacious insects, which had bitten by thousands into her head and, indeed, her whole body.

"Siafu!" So, on the march, sounds frequently the warning cry of the caravan-leaders, thus advising the carriers who follow them of the traces of the large driver-

ants, which, especially in well-peopled, moist neighbourhoods, have taken their course along the caravan-path.

The scourge of snakes also seems to me, in most cases, to be very much exaggerated. In the daily press we are accustomed, every year, to read accounts of a great number of human beings who have been killed by snakes and tigers in India. I have been informed that the premium-system, which prevails there, has caused these numbers to swell far beyond the actual facts, by reason of the venality of the native subordinate officials.

During my African journeys I have lost only two servants through the bites of puff-adders. Naturally, however, the natives who work on the plantations are far more exposed to virulent snakes than are the travelling carriers.

Of the sometimes quite terrible scourge of ticks, I have spoken in the chapter on buffaloes; in certain unhealthy regions these ticks make any kind of halt impossible for Europeans.

Amongst all the hindrances which contend against a lasting stay and against the work of the European in these countries, malaria must always take the first place. Even the uninitiated person knows that only a few favoured constitutions can spend any length of time there without having to get through severe attacks of malaria. The great majority of Europeans undergo violent attacks from time to time. The quinine treatment, namely, the taking of regularly increasing doses of quinine, has undoubtedly a highly injurious effect upon the nervous system, already much affected by the manifold influences of the tropical climate.

Such being the case, it is incomprehensible to me how people can advocate an immigration of German colonists. Germans are usually hard-working people. And even if they settled in neighbourhoods which were relatively free from fever, they would be obliged constantly to come down into the plains, where the great majority would be certain to become infected by fever-germs, even after a short stay.

German women, in my opinion, are especially unfit for East Africa, under any conditions, as things are there at present. Many sad instances confirm me in this view.

Yet, in spite of everything, I myself would not erase from my life even the worst of those hours lived through in Tropical Africa—not even those worst of all, the hours of sickness!

On the contrary, though I have had to struggle against virulent fever, when already on the brink of the grave—more than once, in solitude, well-nigh despairing of recovery—it seems to me that by these very sacrifices I have been bound more closely to that land of mystery than by those other hours that I lived through there, when all was indolent delight in its charms.

Mysteriously, magically, that dark continent attracts us —men of the most varied views, dispositions, degrees of culture! The hours of yearning and longing for the return to Africa assail us all; we want to cut ourselves free from the wearinesses, the multifarious petty claims which our latter-day civilisation imposes on us in daily increasing number; we want to get back into a state of life more

simple and more natural—a state of life which gives freer play to the native forces of individuality.

The thousandfold dangers and hardships draw us after a time with an irresistible magic. May they draw many and many another proved and tried man back to them, that we may labour on the one hand at the development of the country which, despite many errors, is slowly but surely progressing; on the other, at the saving of many of those treasures out of all the kingdoms of nature which are fast disappearing beneath the wave of civilisation!

But to accomplish all this one needs an iron will and a body steeled for every emergency. How quickly, alas! can both be disabled by the recurrent attacks of malaria! The consequences of malaria are evident, above all, in the great diminution of the red corpuscles of the blood. Hand in hand with that goes a rapid decrease in bodily strength.

Hans Meyer depicts most admirably the immense bodily exertions which are demanded by the climbing of tropical mountains, and supports his graphic descriptions by a series of exact calculations of the number of heart-beats and respirations. Both of these symptoms—the almost innumerable heart-beats and the fleeting breath—I have observed hundreds and hundreds of times in myself and my companions; but then, again, I have always noted with amazement what extraordinary feats of endurance one is capable of. Exacting claims upon bodily strength are inadvisable at the beginning of a stay in the tropics. It is only slowly and gradually that the organism can submit to such requirements; and even then, it will all too easily

rebel, as I had occasion to prove in most painful fashion in the year 1902.

To the hindrances and fatigues which have been here touched upon, there may be added what is perhaps the greatest of them all, the want of water—a bitter want, from which the European will suffer over and over again. Elsewhere I have described in detail the pangs of thirst,

MY TAME BABOON RIDING ONE OF MY BEST MULES

and said that these can scarcely be realised at all by Northerners, to whom water is a mere matter of course.

One finds that the most widespread and multifarious fallacies prevail about travels in the more or less unexplored parts of Africa. Even in the days of complete ignorance about this country it was clearly impossible for its discoverers to follow the compass at random into the unknown. If guides were less readily forthcoming, people

kept to the river-courses, and so were always sure of water. Long before our greatest explorers crossed Africa, the Arabs had traversed the continent with slave-caravans; and thus traditional caravan-roads had been established for a long time when Europeans first began to penetrate into the interior. These roads have been largely utilised in the course of such expeditions.

One often finds natives who know by heart every single halting-place on the caravan-route from the east coast to the Congo! They know what kinds of nourishment the different districts and tribes will be able to afford; they know where to find water and the peculiarities and difficulties of the ground; in short, everthing that needs to be known, down to the smallest detail. On questioning them more closely one discovers, to one's great surprise, that these folk have already gone every step of the way long years ago with Arab traders or in some other fashion.

To wander at random into the country is only possible in well-watered regions, and during the rainy season. At any other time, especially during the seasons of great drought, to do such a thing would mean certain and speedy destruction to the entire caravan. Even if a single expected watering-place be found to be dried up, the greatest distress may ensue; in the briefest period a number of the carriers, or, for that matter, the whole caravan, may succumb to the pains of thirst.

It is, therefore, necessary always to provide one's self with native guides, and, in any case, to make the most searching investigation into the water-question. And in

this respect it should be carefully borne in mind that, at times of great heat, water-pools will be dried up with quite astounding rapidity. Or again, for example, if a herd of elephants should suddenly visit a big pool, they may not only drink the greater part of it, but may turn it in one night into a miniature bog, whose scanty liquid contents will quickly disappear before the rays of the sun.

CROSSING A STREAM

In expeditions like mine, however, one will get into difficulties about water in spite of all precautions. I cannot too urgently impress upon every traveller the need for the greatest care in this respect.

Among the disagreeable reminiscences of my African travels are the thunderstorms at night in the high mountain-regions. They are the carriers' worst foe. The combination of furious gales, floods, and cold, with the

indescribably violent electric manifestations, soon strikes terror into the camp, and does great injury in a very short space of time. No matter how often it is endured, this particular experience never loses its terror—the threatening bank of rain-clouds that comes with the falling of darkness; the flashes of lightning and sudden gusts of wind; the roaring torrents of rain that flood the camp, drowning in a trice all our poultry and the young animals of the herds we have brought with us; the shivering and half-benumbed men, scarcely sheltered by their meagre tents, cowering miserably on the ground!

I remember one such night of tropical storm in British East Africa. It was on the watershed between the Victoria Nyanza and the country which drains into the Indian Ocean; therefore at a considerable height above the sea.

And that time there was combined with the fury of the unchained elements the anxiety which is awakened in the traveller by a precarious situation in a hostile neighbourhood. A revolt of the hill-folk was endangering the caravan-road, which, since those days, has been replaced by railways.

The British Government was then, as now, concerned only with the security of this caravan-road, and, naturally enough, took little notice of what was happening elsewhere in the country round about—a sage measure, since the maintenance of order, in the European sense of the word, would require innumerable soldiers and officials!

The officer commanding the fort of Nandi could only allow me from there eight Sudanese Askaris as a

bodyguard for the dangerous bit of road. Ever expecting an attack, I was encamped with only a few people. And in this position I had the experience of seeing the camp flooded in the space of a few minutes, and losing the calves that had been brought with my cows, besides a large number of other things, in the inundation. My half-benumbed servants sought refuge in the camp so far

THE CENTRE OF THIS BRIDGE WAS WITHDRAWN AT NIGHT SO AS TO KEEP MEN AND BEASTS FROM CROSSING OVER TO THE ISLAND

as they could ; but that night laid the foundation of many illnesses, which soon claimed their victims. In a trice my tent was torn down, I myself buried under the wet canvas, and all the zoological objects I had brought with me were either carried away or completely ruined. The violence of the electric manifestations was beyond description : flash upon flash, and fearful peals of thunder alternated with terrible rapidity.

But barely recovered from a severe attack of fever, I had just succeeded by great diplomacy (and the surrender of any of my personal possessions that I could do without) in exchanging some old clothes for a few cows, with a chief in Mumia, on the Victoria Nyanza.* It was only by these inducements that I had been able to get the chief to part with his cows. The loss of the calves now meant as well the drying-up of the cows'-milk, for the zebu cattle, which have gradually got acclimatised in Africa—there are no cattle indigenous to Africa; only buffaloes are native, and the so-called African cattle really come from India—only give milk after the calf has first drunk for some time. The direct flow of milk which we are accustomed to in our own cattle is only an adaptation to environment.

And then, after these icy, rainy nights, the day has to be spent in traversing tracts of country where the grass grows tall and remains wet through and through with

* I should not now be alive to write all this but for the most friendly and unselfish care and attention I received at the hands of two English officers—Mr. C. W. Hobley and Mr. Tomkins—on this occasion, in 1896. Those were difficult times in Uganda and Kavirondo. The railway from Mombasa to the Victoria Nyanza had only just been begun, and the political situation in the neighbourhood was full of anxiety. The small and primitive fort of which Mr. Hobley and Mr. Tomkins were in charge dominated the last stage of the caravan-road to the lake.

I really have no clear remembrance as to how it came about that I was brought into the fort itself out of my tent, which was pitched close by. I only know that I had been struggling for all I was worth against the fever, and that while in a delirium I rushed out of it, and was with difficulty got under control by my men. It took weeks of careful nursing at the hands of my hosts to set me right again, and their hands were full at the time of the most important Government business. The Sudanese sentries on the

dew and rain; the cheering sunbeams cannot penetrate the rain-clouds, and if there are many successive days like this, all necessary articles that the traveller has with him become mouldy, and are ruined by being grown over by fungi. Hence one has the sensation of sinking in an endless sea of grass, whose dripping spikes swing together above the heads of the carriers, while everything, down to the very smallest article, is dripping with water.

In such circumstances the traveller, for whole weeks at a time, comes in contact with nothing but wet clothes, wet beds, wet everything; and now, if fever-germs are brooding in our bodies, is their time for development—the inordinate daily and nightly hardships will be sure to prove favourable to them.

How extraordinarily difficult it is sometimes to obtain trustworthy accounts from the natives of the habits of animals was proved by a small expedition which I undertook in June 1899, from Pangani, in search of buffaloes in Useguha. I had been told so much about them: they ought surely to be easy to find in the hinterland of Useguha. But my undertaking was unpropitious (as indeed were all my journeys that year) by reason of the great famine.

ramparts were on the alert every night, expecting an attack. Shortly after my departure the outbreak occurred, a number of Europeans losing their lives in it.

I feel it incumbent upon me to make this acknowledgment of my deep gratitude to my English friends—I venture so to style them—for their kindness to me.

The distress then was something terrible. In Pangani alone a great many more than a thousand blacks had succumbed; the feeding of the numbers who streamed there from all directions with rice (which had to be imported from India) was very costly. Nowhere were any means of nourishment to be bought, and rice formed, therefore, the staple food for my camp.

Still, before starting on my great journey into the interior I wanted above all things to be thoroughly informed as to the condition of the buffaloes, which had been so glowingly described to me. On June 22nd I left Pangani, crossing the southern river-bank to Mbueni, with thirty loads of rice, two Muscat asses, a number of pack-asses, seventy-eight carriers, and several private soldiers, in all ninety-five men, and marched three and a half hours along the sea-shore. Not far from the town, and near my camping-place for the night, Uschongo, some putrefied corpses betrayed the lamentable state of things. Even the cocoa-palms had been all stripped of their fans by locusts.

I shall now transcribe almost literally the short notes from my diary, which are well calculated to give the reader an idea of this march:—

"*June* 24.—Early morning start; march of eight hours. Over Great—and Little—Kipumbui to Ngnaia.

"*June* 25.—Along the sea-coast. Six-hour march.

"*June* 26.—March to Paramakara; then to Java; way lost. Everywhere we met with dead Mouma palms, which had been tapped for palm-wine by the

Some of these latter take to flight; guide not
le.

June 27.—Start at 4 a.m. March to Quabigo; way
Camp, 4 p.m. Everything wet through, road
gh uncleared forest and very tall sedge; the
day, a fine mist-like rain; some Wasegna planta-
in which Indian millet was ripening. Many huts

DURING THE RAINY SEASON THE CARRIERS OFTEN SANK UP TO THEIR ARMPITS IN THE SODDEN GRASS

deserted. Locusts have laid waste all the vegetation some time ago.

"*June* 28–30.—March to a rocky hill through very tall sedge. Wet through; fine mist-like rain. Tracks of buffalo and elephant about fourteen days old. Grass already far too high. The game has sought other quarters; till to-day seen only a guereza and a reedbuck—nothing else. Almost incessant rain.

"*July* 1.—March to Muega through wet reed-grass. After eight and a half hours, camp in Quoamadi. All the huts ruined—empty ; some survivors tell us that here alone seventy-eight have died of hunger. Pouring rain.

"*July* 2.—March to Gambo. Received by the village chief, Maka bin Ali. Camp in Simbieri. The inhabitants are very glad to trade for rice with different articles; amongst others, beautiful dance-aprons ("kissambo)" made of reed-grass, hunting-nets, and such-like things. Here I am at last able to buy a goat, after having lived almost entirely upon rice until now.

"*July* 4.—From Simbirri to Mseko ; very cold, wet march. The guide escapes, in the course of it, into the high grass ; we lose our way. In the forest-track we find a lately murdered young Mseguha. March till 3 p.m. I reach Pangani with some of my people, but the carriers do not arrive till July 5th, in the evening."

The undertaking thus resulted in nothing, in spite of great trouble, and my tents and utensils were ruined by mould on account of the wet weather. For hunting in grassy Useguha, quite special seasons must be chosen ; and one must have native guides, who are very difficult to procure. . . .

Apart from all these inconveniences, the traveller is of course threatened by the always possible—though really quite unusual—sudden revolts of the natives, or else attacks by them.

I believe, after many years' experience of leading the larger kind of private expeditions, that one can travel

as a private individual in East Africa with an armed force and yet get on excellently with the natives.

I have not had any kind of direct personal trouble with them, and I always punished looting on the part of

A VELT MARCH

my men so severely that they soon ceased to have any desire to transgress in this way.

Nevertheless I have been twice attacked at night by Masai, who were after my cattle!

Before I give a description of this incident, I should like to say that private travellers and their caravans, are naturally, in view of such events, placed in a far more dangerous position than the commanders of colonial police, for these are of course always equipped for warfare. Private travellers may easily find themselves in danger, since the attacks of the natives always take

place very suddenly and at night, just at the moment when the caravan is least expecting anything of the sort.

At one time it was not easy for a private traveller to procure, in East Africa, the grant of a sufficient number of armed followers. It was maintained that one could travel safely through East Africa with a walking-stick for weapon. To a gentleman who expressed himself to me in that fashion, I answered that though I was firmly convinced that my death would be avenged, I should prefer to keep alive if I could. The latest incidents in South-West Africa make one feel still more strongly on this point.

The Government must of course have the right to refuse access to the interior to armed forces of dubious character, or at any rate to deprive them of their arms; it should even be empowered to turn them out of the country. But for experienced travellers, who are able to give personal guarantees, to be refused the proper armed escort, I considered, and consider still, to be a most grave error of judgment.

Events in South-West Africa have shown how cunningly the natives contrive to hide their plans from the officials, and I found it just the same, in the year 1896, in East Africa. My thoughts often go back to the warlike events in which I participated there.

In the summer of that year the natives near Kilimanjaro seemed quiet and peaceable; the idea of a sudden revolt or an attack on the station at Moshi was scouted by the Europeans. In September the large and well-armed expedition which I had been able to join

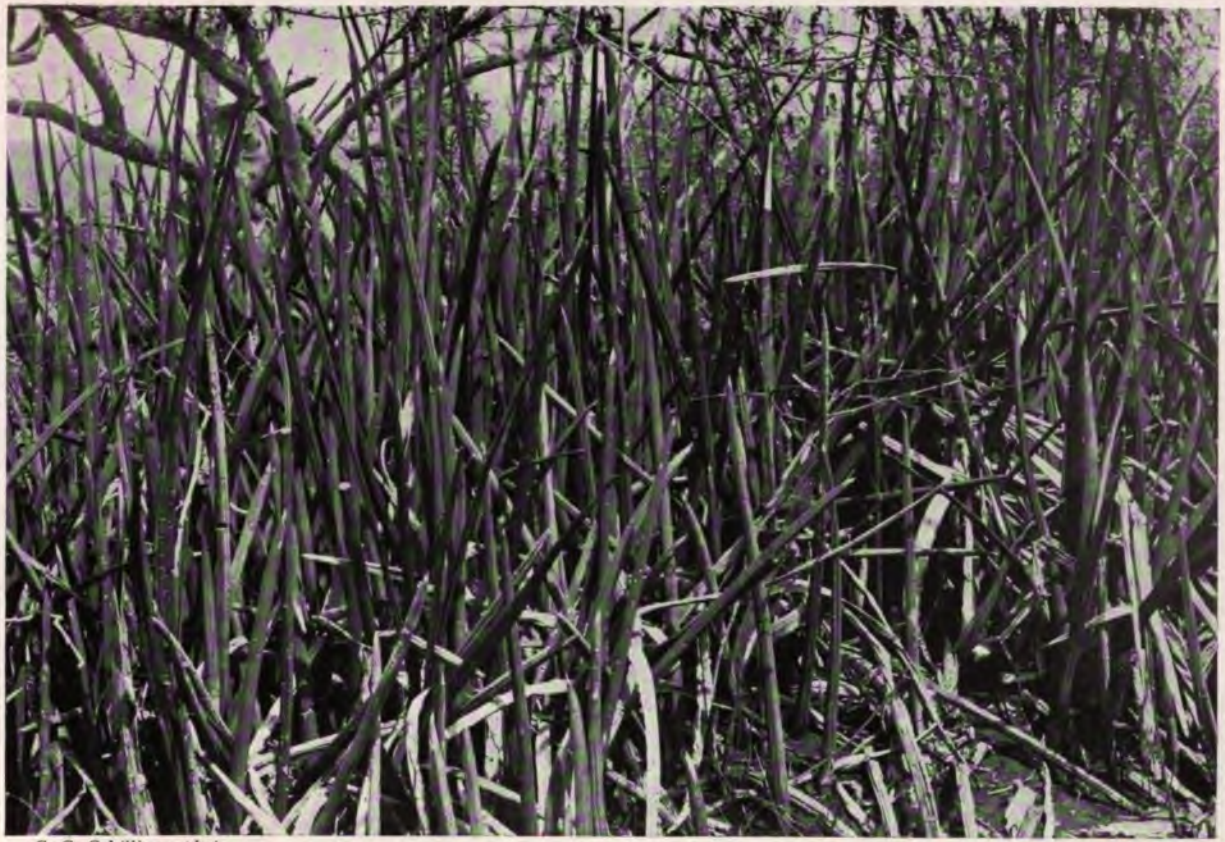
was encamped at the Meru Hills, some days' journey from Kilimanjaro, in the midst of banana-groves—an unquestionably poor strategic position, but chosen for want of a better.

I cannot say that the natives had shown a particularly friendly disposition. The men especially, when they came, armed with spears, into camp during the daytime,

THE RUINS OF THE MASINDE FORT, A VERY UNHEALTHY STATION, NOW ABANDONED

showed themselves shy and hostile; when I spoke to them, they turned away and disappeared among the bananas, while the women bartered their field-produce, as the custom is, among the carriers.

In the absence of the leader of the expedition, I found myself alone in the camp with my dear friend Alfred Kaiser—a man who has spent many years of his life amongst the Bedouin Arabs, and at Sinai—



C. G. Schillings, phot.

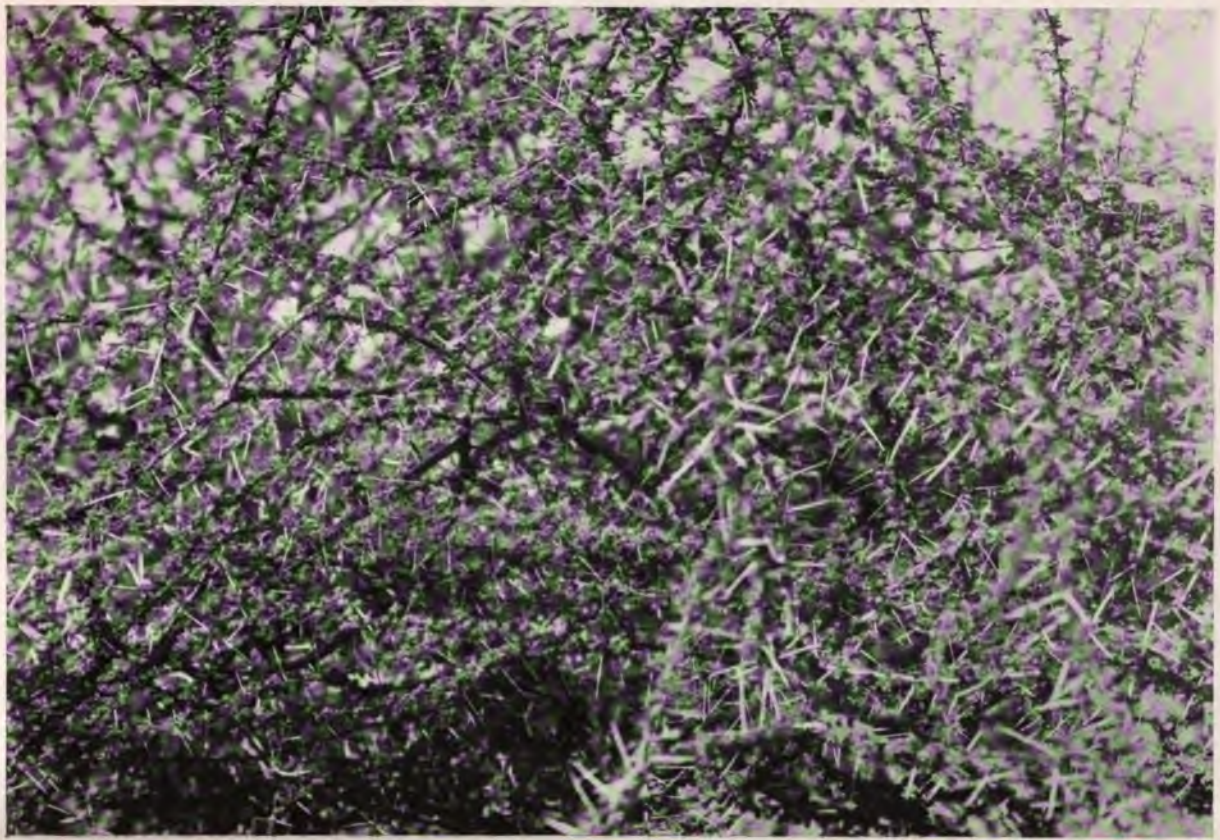
AN IMPENETRABLE THICKET OF *SANSEVIERA CYLINDRICA*

work *Der Kilimandjaro*, seems not to be taken at its proper value, although confirmed by so great an expert as Professor Hans Meyer.

A short time after my departure from Moshi I experienced a night-alarm. I had spent the evening as the guest of the Catholic Mission, and had been, as always, most cordially and hospitably entertained. Returned to camp, I had scarcely fallen asleep when I was roughly awakened. . . . It appeared that a great number of natives had suddenly and stealthily penetrated into my camp, but had instantly, on the alarm-signal being given, vanished into the darkness.

Months went by without incident, except that some side-arms were stolen from my servants, whom I had stationed at some days' distance from myself for the purpose of buying vegetable food—and these weapons were never recovered. But when, at the end of my expedition in the year 1899, I came again to Fort Moshi from the Njiri Marshes, I never dreamed that I was to pass suddenly from the profoundest tranquillity to a state of something like war. The very night before my arrival the natives had actually attempted an attack upon the fort. The garrison had fired about five hundred shots.

We now spent, rifles in hand, some anxious days and still more anxious nights, during which my entire company of armed men was consigned to the yard of the Fort and placed at the disposition of Captain Merker, who was then Deputy-Commandant. He had, in the absence of his chief, provided with the utmost forethought for all



C. G. Schillings, phot.

knowledge of the surrounding inhabitants, told me that, on the contrary, it was actually to the Christian natives that had been assigned the most prominent *rôles* in the assassination of the missionaries, which was to be undertaken as soon as the fort was conquered. And later it was made plain that all the Europeans were to have been

A FORSAKEN VILLAGE. IN THE FAMINE YEAR I CAME UPON SEVERAL SUCH

assassinated, provided the surprise of the fort turned out completely successful.

Be that as it may, in my opinion an execution of native princes, especially to such a number as nineteen, is a serious mistake, which unquestionably will one day bring its own punishment. I consider the policy of intimidation by means of the execution of native princes to be thoroughly false in principle. It is much more likely to sow the seeds of a terrible hatred.

of the blacks who had also managed to escape the slaughter.

In any case we needed to be very careful, as we were close to the English border, and this gave the hostile Masai an opportunity of getting off scot-free. It was perhaps too confiding in me to afford shelter in my camp for weeks to an increasing number of Masai

WANDOROBO

warriors. I had very much desired the presence of some of these strange people, for purposes of study. But when their numbers swelled beyond all reason, I intimated to them that I would not allow more than ten men, in addition to those already there, to remain in my proximity. On this they suddenly dispersed in every direction, and only two of the old folk came to me afterwards.

Some most difficult and lengthy marches now awaited me. We had to make forced marches, so as to get past the waterless parts.

On August 20th I had started at 1 p.m., and after a forced march had, towards evening, pitched camp in a hilly part of the velt, sparsely grown with terminalias and acacias. The loads were laid down, and my cattle—about ninety head—were shut into a hastily contrived thorn-barricade, called a "boma." All around lay the wearied carriers, who soon, despite their thirst, fell into a deep slumber. My taxidermist's and my own tent had been hastily put up, and had no sun-blinds. As usual, my armed men slept together by one of the camp fires, and a sentry was patrolling the camp. Even we Europeans were fast asleep, when in the middle of the night the Masai, who had followed us into the desert, suddenly attacked us. The aggressors, some of whom had already got into the camp, were, however, repulsed, and quick as lightning volley followed volley into the darkness. Then, with a clashing of arms, the foe took to flight.

All my unarmed people had thrown themselves upon the ground, as they were taught by me to do, while we Europeans formed a square with the armed men. Now followed some hours of suspense in total darkness, only interrupted by shots here and there, wherever a rustling noise might be supposed to betray the presence of the enemy.

We strained all our senses to the uttermost, and strangely did the utter stillness of the men crouching

on the ground contrast with the lowing of the frightened cattle and the crackling of the volleys. The camp-fires, which even at the beginning of the attack were burning very low (we were short of fuel), had now completely gone out. Then we all heard again plainly, not far from the camp, a clatter like the knocking of spears against stones.

MY COOK AT HIS AVOCATIONS

Instantly some shots were fired in that direction. And so the night went by.

This much is certain: it was entirely to the very quick and successful alarm that we owed our safety. During the writing of these lines, almost exactly a year after that incident, there comes grave news from the Masai countries; much trouble is brewing in the different regions under the Ol Morani, and even in British East Africa several additional Indian regiments have been

stationed. So it does not seem at all unlikely that my little incident was the beginning of this hostile movement—a movement as to which nobody can tell what day it may break out, or to what extent it may spread!

On the next day several Masai were perceived at a good distance from the marching caravan; they were watching us, but after some shots from us they took to flight.

It is a proof of the cunning of the Masai Ol Morani that precisely that night was chosen for the attack when neither I nor my people could have expected any such thing, since that part of the velt, being waterless, could not be supposed to contain human beings. At any rate we had the most narrow escape from suffering the same fate that the massacred caravan had suffered the year before. And our luck in escaping was the more extraordinary in that it was a pitch-dark night, which gave the spear-armed Ol Morani a great advantage at close quarters with our scanty firearms.

In some cases known to me the Masai had always tried to drive off the cattle quite noiselessly, and in this they showed astonishing cleverness. It was on the first hint of resistance that they had made use of their spears, and had struck down all living creatures instantly. Only my quite extraordinarily quick and successful alarm could have saved us; and so I stick to my system of always sleeping surrounded by repeating rifles and Mauser pistols, ready for use at a moment's notice. From that time forward I was, of course, even more cautious than before, and a greater number of Mauser rifles—begged for from

C. G. Schillings, phot.

MY WANDOROBO MARCHING AHEAD OF THE CARAVAN

MANY OF MY CARRIERS WERE ACCOMPANIED BY THEIR WIVES

the fort, and delivered with the necessary ammunition—ensured greater safety to my caravan for the future.

I must confess that such attacks, in blackest darkness,

are not among the choicest delights of African travelling, especially as in the use of firearms under these conditions it is scarcely possible to avoid wounding, or even killing some of one's own people. Most of the attacks from the Masai went off in the same way, and almost without exception in the night time.

But I have never witnessed the sight of a Masai warrior with his spear and shield boldly defying European firearms in open warfare. Earlier travellers had this experience before the time of the cattle-plague.

Shortly before the night-attack I had an unpleasant encounter in rather odd circumstances with a large number of armed Masai warriors in full war-kit. At some little distance from my camp I had dug a pit, which I had covered with a roof, earth-coloured, and something like a tent in shape; I had laid a carcase near it, and then, completely alone, I had taken my place in this contrivance so as to get some photographs of vultures in their attack on the carcase. For some hours I had been waiting in my sun-baked, narrow, uncomfortable habitation, when suddenly I had a strange experience. To my utter amazement I suddenly saw quite close to me a great number of Masai warriors in full war-paint, therefore on the war-path; and, drawn by curiosity, approaching my lair, which they had espied with their sharp eyes. So as not to expose myself to the danger of having my hiding-place pierced with a spear, I had intended to appear suddenly from the depths and go to meet the warriors, knowing that they would instantly take flight. But on looking back through an opening which had been made in my lair, I saw a lot of my soldiers

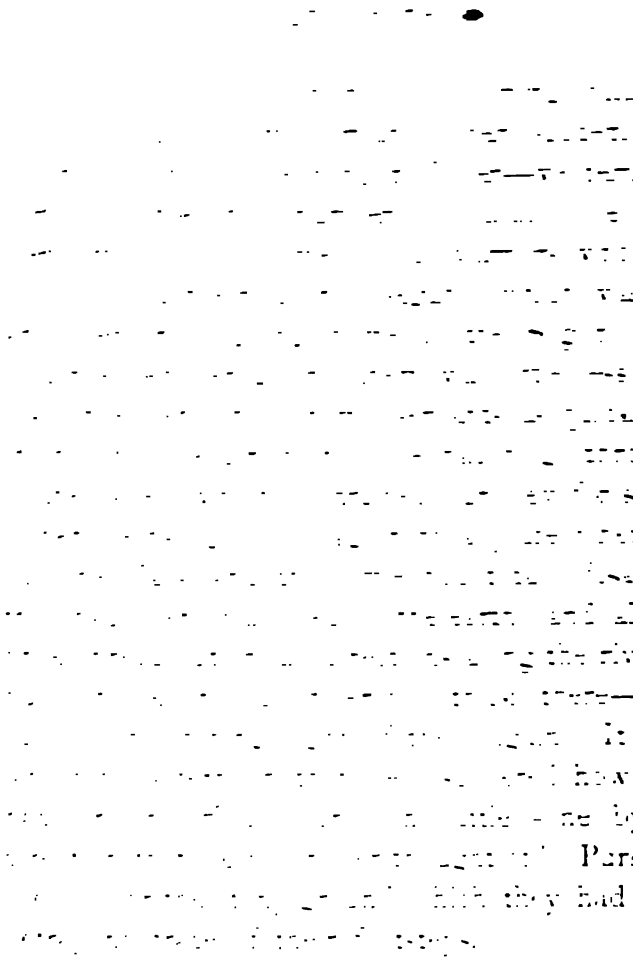
hurrying towards me as fast as possible. Evidently one of my men, growing uneasy at my long absence, had wished to inform himself of my safety from a distance. Thus he had seen the warriors, and had instantly alarmed the camp.

Unfortunately it was not possible, though we searched for hours, to find the Ol Morani, and enter into relations with them. . . . It is difficult for a civilised man to form

WANDOROBO

any idea of the highly developed capability acquired by his desert-ranging brother of victoriously encountering all the obstacles of his inhospitable abiding-place, and of mastering and setting at naught all its terrors.

The cleverness with which the Masai folk manage even the biggest droves of cattle, the skill and rapidity with which they drive them, were brought home to me by the following incident.



quarrels and conflicts
tribes. I cannot help
that many of these complications
Europeans had so chosen.
it was undoubtedly easy to travel
equipped with lots of cartridges, and
Curiously enough, it was always the natives
who, in those days, began hostilities: a treacherous arrow

C. G. Schillings, phot.

TAWNY EAGLE AND KORI BUSTARD

was shot at the approaching traveller, volleys were fired, the inhabitants of the localities took to flight, and all their provisions were instantly looted by the "conquerors!"

But if the traveller is inclined for peaceable barter-traffic, he must of course have with him a great quantity of wares useful for that purpose, so as to keep up the food-supply of his men; and in times of drought and high prices the natives naturally demand more for their field-produce than in normal seasons, for they themselves are wholly dependent on their gains from the fruits of the soil until the next harvest.

To travel with East African carriers and keep on friendly terms with the natives is, for a time, at any rate, no very difficult achievement; and if I look back upon anything with satisfaction it is upon the fact that I, at any rate, have never knowingly been obliged to shed the blood of a black man.

The Preservation of African Game

Already there is in existence in Germany a society for the preservation of the beauties of nature. The term should be held to include not merely scenery, but also the animal life and plant life thereto belonging.

The sportsman sits as ruler over the entire animal kingdom; he gives out its laws, and has powers of life and death. Whatever he may decide is accepted without question.

If Germany can boast of an old and honoured institution, in its confraternity of German sportsmen, such as you will hardly find in any other country, many Germans—I say it clearly and frankly—are a great deal too prone to destroy a number of beautiful species of the animal fauna, considering themselves warranted in exterminating, by means of traps and even of poison, as well as by powder and shot, all those vermin, as they are designated, which prey upon our favourite forms of game. This interferes with the natural order of things, and degeneration of the species results inevitably.

It is not only the man with the gun who arrogates to himself this right; the angler is of the same way of thinking, and to be logical we should suffer bee-keepers to kill off all our swallows and stand by while the vine-grower spreads destruction among thrushes and other singing-birds. There is scarcely any living creature against which some case might not be made out for damage done to some human industry.

In the days when otters and herons and kingfishers and any number of other animals and birds were left free to prey upon the fish in German seas and lakes and

ponds and rivers, the supply of fish was always infinitely greater than it is now. The anglers' societies persist, however, in declaring war against all these enemies of fish—otters and herons and kingfishers, sea-gulls, cormorants, diving-birds and water-ousels, and all the rest. They imagine that with their special schemes they will succeed in refilling with fish the rivers they have allowed to become poisoned with chemical drains.

The sportsman kills off foxes, martens, polecats, weasels, wild cats, badgers, otters, and "all birds of prey with talons and arched wings," as an old forester once expressed it to me. Hand-in-hand with the fisherman, he wages war against the cormorant, the fishing-eagle, and any number of other birds and beasts. They both forget that the farmer might very well cherish similar feelings and wage war against other creatures in the same way.

Fortunately there are exceptions to this rule, such as we find among the Mecklenburg sportsmen, who are satisfied to kill but few foxes rather than great numbers of hares, and among those English landed proprietors who leave its freedom even to the peregrine falcon, though fully conscious that, together with its mate, it levies its tribute daily upon the grouse.

We feel strongly about the ruthless methods of the south of Europe.

But can we afford to throw stones?

The singing-birds that nest in the north of Europe wing their way twice every year over the length of Italy, and their numbers are thinned always as they

pass over the densely populated districts, the forces of electricity and other modern inventions being directed against them.

This state of things is merely a survival from the days when mankind looked no further than the morrow, as is still the case with the negroes. We in Germany have learned at least to spare the singing-birds. German sentiment could not bear to see them injured. But, before we can venture to appeal to our southern neighbours to give them a free passage on their way to us, we must learn to be more merciful ourselves to the gradually diminishing ranks of our own wild birds and beasts.

We destroy our woodcock now, both before and after their spring migration; while the thrush, which in the autumn suddenly becomes transformed into the fieldfare, falls a victim at all times to those snares which are justly proscribed by sporting rules on German territory.

In all cases in which we imagine that certain interests are being injured, we proceed, in entire disregard of the overwhelming world of non-sportsmen and in opposition to all lovers and students of nature, to rob our fauna of their greatest treasures.

A pair of storks afford pleasure and interest to thousands; yet, if a stork kills a few leverets, the sportsman punishes it with death, in entire disregard of the feelings of other people.

So it is with sea-eagles, buzzards, kites, the beautiful kestrel, our fine owls, the splendid crested grebes (which allow you to come within a few yards of them in your boat), the herons, which thrive better on our lakes than

anywhere else—they all fall victims to the death-dealing bullet.

So long as home-dwelling Germans (and other Europeans) allow themselves to be swayed by such short-sighted ideas, how can they expect better things from regions like East Africa, where Europeans have a hard struggle for existence.

Our game-laws are not enough in themselves even at home to keep our preserves free from poachers. We must always have keepers on the alert, day and night. How, then, can we hope to control reckless European adventurers in the heart of the African wilderness—men who know nothing either of sporting etiquette and traditions or of animal life, and who have no local responsibilities of any kind—especially in view of the immense commercial value of the animals out there?

If I seem to be drawing a somewhat pessimistic picture of what is in store for that fauna whose interests lie so near my heart, I must add that I welcome cordially the steps that have been taken of late, by both the British and German Governments, for staving off as long as possible the impending doom. It is being gradually realised that rules and regulations are of no avail. The English have given a useful object-lesson in the preserve which they have instituted all along their railway and in the neighbourhood of the railway stations, under the watch of the railway officials. This plan has had the best results for some years past.

The wicked sportsman, of whom you read so much in books and newspapers, and who is really a good deal

C. G. Schillings, phot.

A MANED LION

of a myth, is now at least regarded no longer as the sole cause of the disappearance of the African fauna, the guilt having been brought home at last to the chief—culprits the traders, pseudo-colonists, Boers, Askaris, armed natives, and all the other pioneers of civilisation.

For many years a collector of natural-history specimens, who went out quite unselfishly on behalf of German museums and who spent £5,000 in the colony, was regarded as a very undesirable and unwelcome visitor. Both in German and British East Africa the game was reserved for other kinds of sportsmen. When caravans reached the coast with a load of five hundred elephant-tusks, these were "merchandise"; but if a private traveller killed a few elephants he was a slaughterer of wild animals!

From the very nature of the case it is impossible to establish anything like complete control over the hunting of big game, but it is a matter for much satisfaction that the Governments have now taken the matter strenuously in hand.

How difficult it is always to settle the question as to what constitutes "harmfulness" is shown in Germany by the great dispute carried on in regard to the utility of crows, in which the judgments of recognised authorities are so absolutely at variance, while the matter in dispute is probably one for the use of common sense.

One of the most notable provisions enacted by the International Conference was that which forbade the

exportation of elephant-tusks weighing less than ten pounds apiece. I was discussing this one day in Africa with a resident in the Congo State. "*On y mettra du plomb*," he remarked! The insertion of "a little lead" into the ivory would bring it up to the specified weight!

If the exportation of the tusks of female elephants could be prevented—they are easily recognised by the small cavities—there would be some hope of preserving the species effectively. It is not possible, however, for the hunter to judge the weight of the tusks of the elephants he comes across in the thickets. If he really wishes to spare all that have not marketable tusks, he must select only the very largest individuals. This is too much to demand of those who make their living out of it under very trying conditions, when they know that wily Greek and Indian merchants will find a way of disposing of their illicit wares satisfactorily.[1]

With the spread of colonisation, and the setting apart of districts within which there should either be no shooting of wild animals or only of certain specified types, the question as to what animals are to be regarded as harmful has come more and more to the front.

Elephants and hippopotamuses must be acknowledged to come under the category of harmful animals. Yet the

[1] There is no export duty, unfortunately, in the German Cameroons, whence 452,100 kilos of tusks, chiefly from young elephants, have been exported during the past ten years. There are 10 to 15 per cent. duties in other African colonies. There is no import duty on ivory in Great Britain or in Germany.

natives of India have contrived to live comfortably side by side with herds of elephants. Hippopotamuses are so apt to destroy plantations that they certainly have to be got rid of in all neighbourhoods in which Europeans settle down. Elephants also are often very destructive in the same way. The preservation of elephants is undoubtedly against the interests of European colonists; and indeed the preservation of any species of wild animal would seem to be against the interests of colonists.

Baboons, which any one is free to kill, are also very harmful to plantations. Cultivators of millet and other grains have to employ watchmen to keep off both the apes and small birds from the crops during the very brief period when these are ripening. The natives erect sheds, raised up on four poles, and from these, with the help of ropes, which they fasten across their fields, and to which they attach feathers and other scares, they frighten away wild boars, which do a lot of damage to crops, and which are difficult to get rid of.

Besides these animals and many rodents and meerkats, certain of the smaller antelopes occasionally are a nuisance to settlers. All other kinds of animals avoid the neighbourhood of man, and keep away on the velt, where they can do no injury. Rhinoceroses especially are very seldom known to come near inhabited districts, and the same may be said of giraffes and the larger antelopes. I am anxious to insist upon this point, because both Prince Löwenstein and myself were assured, greatly to our surprise, that the giraffe exceeds all other animals in the way it destroys the East African forests.

Statements of this kind made quite without knowledge get a lot much credence at home.

With certain exceptions, therefore, there is no pretext for the killing of African big game on the ground of their harmfulness. On the other hand there is urgent need for the carrying out of every effort to prevent the ravages of insects and reptiles which play havoc with many lines of colonial enterprise. Coffee-plantations suffer, for instance, in an extreme degree.

But it would be a great mistake if the fauna of the country were to be generally wiped out, as sometimes it has been locally in the hope of thereby getting rid of ticks, which are known to communicate disease. According to my information, the infectious diseases in question are to be met with in districts where wild animals have long been absolutely exterminated.

For a long time past rewards have been given for the killing of lions and leopards, though it may be questioned whether this grant is not justified by results. Assuredly, without rewards many one would lose a chance of killing either lions or leopards whenever this might be practicable, while the rewards are not large enough in themselves to tempt any one to go in for this kind of shooting. Of late years the rewards have been lowered in value. Nor would they induce any one to set about the killing of crocodiles or poisonous snakes. Personally, I doubt very much whether the destruction of the crocodiles would have the result of increasing the supply of fish in African lakes and rivers. I cannot imagine a greater wealth of fish than I have seen out there. I remember

being impressed by this when looking on at Europeans securing catches of fish by the use of dynamite cartridges—an operation that was prohibited, but that it was not possible to prevent. It is interesting and instructive to note that the swamps, lakes, and rivers most frequented by crocodiles, turtles, otters, and fish-eating birds of all kinds, are always alive with fish. It is often impossible to get water for one's bath that is free from fish. I used to find it difficult even to keep them out of the dishes in which I washed my negatives.

To sum up, only those animals should be exterminated which are indisputably injurious to man. For the most part, the beautiful wild animals of East Africa find ample nourishment on the wide velt, and do no harm to us whatever.

[illegible]

A Race of Warrior Shepherds: the Masai

S[illegible] conversation with my [illegible] the imperial colonial [illegible] holding that the [illegible] belonging to the [illegible] unmistakably [illegible]

[illegible] imposing work [illegible] which he has [illegible] before the period [illegible] had come from [illegible] settled down upon the [illegible] demonstrate more very [illegible] strictly monotheistical [illegible] oldest branch of [illegible] possession of the Biblical [illegible]

[illegible]

A STATELY SPECIMEN OF THE OL MORANI

myths, before these myths found their way to Babylon. The Masai have finely cut features, tall, slim figures, and very often beautifully shaped feet and hands.

Merker deals also in his work with the common error which assumes the Semites of old to have been identical with the Jews of to-day. As a matter of fact, the special characteristics of our modern Jews did not come into existence until after the Semites began to mix with the race of Heth. The Bible touches repeatedly upon the mingling of the two races, which began long before the Hebrews settled down.

I cannot enter further into these matters here. I shall only say that, in Merker's book, we have before us the work of a man who has been able to enter into the soul of a people in a quite unique manner, and who has consecrated many years to his task. He has amassed an amount of material which cannot but arouse the admiration even of those students of the subject who may not be able always to subscribe to his conclusions.

Before he entered upon his study, for which he was well qualified by his scientific training and his familiarity with this kind of work, our knowledge of the Masai was very scanty. No one else has ever undertaken so thorough an investigation into their language and habits and modes of thought. I think I am in a position to estimate the immense difficulties he had to cope with.

This is not the place to discuss Merker's theories in detail. I must leave that to the experts. This much is certain, that the "ol Morani," the spear-wielding warriors of the race, have dominated the velt-land for thousands of years, roaming far and wide, and increasing their herds always by pillage and plunder among the other races settled in the country. Like the Indians of North

America, they found their greatest happiness in untrammelled freedom. A warlike people, they scorned mere settlers and men of peace. Thus they lived their life until the coming of the white man. Now their days of predominance are over. Soon, probably, they will have reached their downfall. It will be with them as it has

MASAI WOMEN

been with the red man. In truth, their ways do not fit in with the spread of civilisation over the velt.

But just as we all delighted as boys in the blood-curdling tales of the Red Man—there are many of us, indeed, well on in years, who still so delight—we cannot but feel a certain amount of sympathy with this picturesque and impressive people, who for so many thousands of years have lived their unchanging existence in the freedom of the velt, practising consistently the virile virtues of

the fighting man and holding their peace-loving neighbours in disdain.

And how closely in touch they are with the mother-earth of their Nyika! I remember once how a Masai child, barely six years old, having got lost somehow in my camp, made his way home to his parents' kraal two long days' journey away through a pathless jungle, in

which he swam the rivers and arrived there safely. I would not have believed it had I not verified the fact myself.

[illegible] with their wild companions [illegible] for a new and alien [illegible] and spears are of no avail [illegible] the invader. They owe [illegible] to pestilence. The

C. G. Schillings, phot.

A DANCE WAS CARRIED OUT IN MY HONOUR

rinderpest which swept over East Africa two decades ago exterminated their cattle, and in a few days man and woman and child died of famine. The survivors—some hundreds of thousands—must soon die off, unable to adapt themselves to any other mode of life than that to which they were born and bred.

We have here a striking illustration of the way in

MASAI OL MORANI WITH SPEARS AND SHIELDS

which an entire race can disappear from the face of the earth. Barely a century ago the Masai enjoyed a period of great prosperity under their mighty chief Mbatyan, the hero of many legends. There is something inexpressibly melancholy in the sight of the remnant of this heroic people fighting desperately for their life. There is a world of difference between them and so many of the unsympathetic mongrel races to be met with in the

west and south-west of Africa who have abandoned their ancient customs through the influence of civilisation.

For days and weeks together I have lingered among the Masai, encamped in the vicinity of their kraals, and I have learnt to understand and appreciate them. Their habits and customs, their songs and dances, were to me an unfailing source of interest and enjoyment. Often, I remember, a feeling of melancholy would steal over me as I sat by the camp-fire gazing at these splendid fighting men, with their fine stature and noble bearing, as they sang their time-hallowed melodies or war-songs, shield and spear always in their hands. They lay or crouched all round me, their faces illumined by the flames. I often asked myself how I should fare, if I had to meet them in combat, supported by my followers! Even when, as happened more than once, I found my caravan threatened by these Masai, I could feel no ill-will against them. They were but fighting for their ideals, as we Europeans have daily to do for ours. And they awaited the day (so Merker tells us), when their great chief Mbatyan shall come back to them and stand once again in their midst, to free them from the yoke of the stranger.

The following incident illustrates the way in which the Masai cling to their traditional habits. A Masai boy had been several times to Germany with his master, a Government official, and had mastered our language, Berlin jargon and all, in an astonishing fashion. When he had grown to man's estate, and had quitted the service of this official, he was found one day by a European

who knew him, no longer in civilised garb, but smeared all over with red ochre, his hair grown long and worn in plaits with a sort of pigtail—"ol daiga," as they call it—dripping with grease, in company with another Masai in full war-paint. When the astonished spectator inquired

A MASAI AND HIS OX

what all this meant, he replied in the best Berlin German: "I have decided to go back and live among my own people."

I shall never forget the answer one of my Masai friends vouchsafed to one of my carriers, who was struck

[illegible]

[illegible] comes to my [illegible] Muftar, a Swahili [illegible] him in recognition of his [illegible] years, to buy him his [illegible] put his old Arab master to [illegible] Different races, different ideas!

I have heard many other instances of the fine feeling

which characterises the Masai, from missionaries whose hospitality I have enjoyed, and from others. An intimate friend of mine once declared to me with feeling that, if not himself, he would choose to be a Masai Ol Morani of the old stamp.

Merker's book on the Masai must constitute one of the most thorough and complete studies of an East

MASAI WOMEN

African race yet published. By their conscientious and able investigations into our colonial affairs, men like Count Götzen, Huhlmann, Merker, Richard Kandt, Fülleborn, Paul Reichard, Gassarge, and Kræmer will be found probably to have been of infinitely greater service than many of those who have striven after perfection through the medium of complex and often impracticable by-laws and regulations.

The first thing to be done is to learn something of the races we have to govern. In this way alone can we avoid terrible mistakes, involving us in desperate struggles, in which the lives of thousands of Europeans and of natives would be lost. But the system of changing about our officials from post to post militates, and must always militate, against this. Men should be left as long as possible in localities to which they have become accustomed, and in which they have made their mark, quite irrespective of the rank they may hold. It is impossible to introduce our own habits and customs unchanged into foreign lands, and force them upon the natives. We must take account of their own habits and customs before we attempt to rule them.

Only in this way shall we learn how to deal wisely with the natives of our African colonies and to turn them to good account. These regions for the most part must always remain closed to European immigration. Gradually to mould the inhabitants and to develop their capacities to the utmost—that is at once our only practicable policy and a high and noble ideal.

THOMSON'S GAZELLES

Envoi

SLOWLY, but surely, the explorer makes his way to the uttermost ends of the earth. It is but a few months since Tibet, that land of legends, hitherto unknown and impenetrable, had at last to open its gates to the invader.

Asia, traversed for long ages past by the forces of civilisation, had been able to keep this one stronghold inviolate, though Africa, until recently the "Dark Continent," no longer maintained any such refuge. Both continents surprised the world of zoological science by the disclosure of two large mammals, the very existence of which had been unsuspected: Asia with the singular takin (*Budorcas taxicolor*); Africa with the okapi.

If there be no longer any great riddles to solve in the Dark Continent, there still await investigation any number of very difficult questions in every field of knowledge. To give an illustration: there are over two hundred kinds of birds still to be discovered there,

according to the surmise of Professor Reichenow. And to give an idea I may point out that as yet no success has been met with in the efforts to cope with the rinderpest. For Germans there is a wide field for labour in Africa—a field which, with more experience, we shall learn to cultivate better.

No one is in a better position to realise this than the wanderer who has spent years in the wilderness, striving strenuously to wring from veld and marsh and forest the secrets they have withheld from mortal eyes.

If we are to explore these regions and save their treasures for posterity, we must make haste: for many races of natives with their ancient habits and customs, and with them the animal life, are dying away under the breath of civilisation all too speedily.

Here I am minded to speak again of my trusty followers who shared my sufferings and my delights so many thousands of times. Hardly a single one of them did I ever find not eager at any time to set out with me on a new expedition into the interior, and in most of them I had devoted and grateful servants.

I must give a thought to those also who lost their life in my service, and whose bones now lie bleaching beneath the equatorial sun.

The years I spent out there come back to my memory as years of intense happiness and enjoyment, drawing out all my powers to the utmost. The veld lies outstretched before me—now flooded with sunlight, now bathed in the mystical radiance of the moon—alive with

the life of its wild denizens. The wanderer has perhaps, like so many before him, devoted the best of his life to this strange but witching land of Masai-Nyika. Its witchery draws us still when we are back at home. Hourly and daily we hear it calling to us—this splendid, endless, unforgettable Masai-Nyika.

A NATIVE GATEWAY

OL DOROBO

APPENDICES

THE "STONEHOUSE" NYUMBA YA MAWE, AN ISOLATED CRYSTALLINE BLOCK OF SCHIST-ROCK NEAR THE RUFU RIVER

APPENDIX A

A Few Words about Herr C. G. Schillings' Collection of East African Mammals

BY

PROFESSOR PAUL MATSCHIE

Curator of the Royal Zoological Museum, Berlin

AMONG those who have lived or who are now living, in the German East African colony, there are a good many who are convinced that the gradual thinning of the wild life out there is the outcome principally of the expeditions of sportsmen and of collectors of natural-history specimens. They have heard of the immense quantities of antelope hides and horns which travellers of this class have amassed, and in all good faith they give expression to their astonishment that such people should be tolerated.

Thus it has been with C. G. Schillings, because he has ventured to make his way from the interior to the

coast, and thence home to Germany, with a large number of such trophies. People began to talk, quite erroneously, of his having helped to exterminate wild life in the regions which he had visited. Schillings is a first-rate shot, he is known in zoological circles as an authority upon the fauna of East Africa, and the collections of specimens which he has brought home have shown that he has worked throughout like an expert naturalist. A man who sets about his task in such real earnest is not likely to be guilty of such recklessness, or to kill more animals than he really needs for his purpose. Schillings has brought home some forty specimens of lions, about thirty-five leopards, as well as large numbers of hyænas, jackals, and other beasts of prey. These beasts of prey would have destroyed a greater number of antelopes and other wild life of the region than Schillings has killed for his entire collection.

It is not to be denied that in many districts the stock of wild animals is decreasing to a regrettable extent; but this is chiefly in districts which have been opened up by colonists. In the vicinity of all spots where Europeans have settled, wild animals inevitably become scarce, because they are deprived of their haunts and retreats, and find themselves in continual danger. The same thing is to be observed along the regular caravan-routes, especially at points where great numbers of antelopes have been shot and used as barter for vegetables.

This kind of thing has now been put a stop to. A for the protection of game has come into existence, large regions have been marked off in which wild

life is preserved, and where no shooting is permitted. The law provides for different kinds of "close times." The breeding-seasons occur at very different periods of the year in different parts of German East Africa. From this it has come about that between Rowuma and Wami—between the coast and the great lakes—eight separate regions have had to be defined, each of which is differentiated from the others by its climatic conditions, and each of which has its own special fauna. In each the buffalo, the giraffe, the elephant, and antelopes of every description are distinguished by certain peculiar characteristics. In the Masai region, for instance, all these animals differ in appearance from those to be met with in the south. It is possible to say for certain, from the shape of a buffalo-horn, whether the animal comes from Rowuma or Pangani, from the Masai country or Nyasa or Nyanza. Many kinds of antelopes are to be identified in the same way, not merely by special characteristics as regards their colouring and the formation of their horns, but also by their entire build, the shape of their bones and of their skulls, as well as by their habits of life.

He whose business it is to preserve wild life, and to maintain valuable animals for the benefit of mankind, must first make sure what kinds of animals he is to preserve and what are their habits, if he wants to do his work efficaciously. To this end, zoologists have to busy themselves over the study of the animal world, and their researches have to be turned to account, so that the preservation of wild life may be carried out upon the

right lines. Studies of this kind can only be pursued in large museums, where it is possible to note the special characteristics of specimens brought together from distant countries and to compare large numbers of them from different regions with each other. Only in this way is it possible to determine over what area each species is distributed, what are its habits of life, and of what importance it is likely to be to man. Only in this way, too, is it possible to make out a systematic plan for the study of the fauna of various sections of the earth, with a view to filling up the gaps in our information.

Schillings has placed his collection at the disposal of zoological experts in the most generous manner, and has made provision for the exhibition of most of his specimens in our large museums—chiefly the Berlin Museum. But the museums of Stuttgart, Munich, Vienna, Karlsruhe, and other cities have also been enriched by these very valuable gifts of specimens of the great African mammals.

One can form no notion, from seeing a stuffed giraffe or rhinoceros in a museum, of the immense difficulties involved in the securing and preparing of such a specimen. When the animal has been shot and its skin carefully prepared—all the fat removed from it and every precaution taken against flaws, the skull and bones also having been cleaned separately—the collector has still to take immense pains about the transport to Europe. The weighty burden has to be carried on mens' shoulders to the coast, along dangerous tracks, often through marshes and almost pathless thickets, and across streams and rivers.

The ravages of insects and the damp atmosphere have to be fought against. There are long weeks of anxiety before the goal is reached.

All this trouble, to say nothing of the considerable expense, is involved in the bringing home in good condition of a *single* such specimen; but Schillings has brought home quite a number of giraffes, buffaloes, rhinoceroses,

HOLLOW TRUNK OF A GIGANTIC FIG-TREE

and elephants, a great number of large antelopes, and hundreds of hides and skins and skeletons of every description, all of them in such good condition that they are suitable for exhibition in museums.

In this way he has made it possible to determine the fact that these great Ungulata differ essentially in various particulars from those to be found in other parts of Africa, and that all these families are divided into species confined

within certain regions, and each of them with distinct characteristics.

I have been able to establish the fact that, even within the confines of German East Africa, there are two distinct species of giraffes, one living to the east of Kilimanjaro, the other in the Pangani region. Schillings has brought home specimens of both species, one of which is now known as *Giraffa schillingsi*, in honour of its discoverer.

The examination of these specimens has not yet been completed, but it has been made clear already that the animals killed in the Pangani region can all be distinguished from those secured in the Masai country. Between Kilimanjaro and the coast there are to be found quite different types of baboons, lions, zebras, and buffaloes from those in the Masai country. This fact is of great importance, and Herr Schillings, in enabling us to establish it, has rendered an important service to science.

Thanks are also due to him for the careful way in which he has preserved for analysis the contents of the stomachs of animals, as well as the various parasites by which they are infested—ticks, lice, maggots, and the worms in their intestines. He has brought back with him also a great number of very valuable embryos, which further our knowledge as to the development of the Ungulata, their breeding-time, etc.; the more so that these specimens have been accompanied always by written particulars as to the date at which they were obtained and other relevant circumstances.

We need only glance at the complete list of the

mammals brought home by Schillings to realise the importance of his collection. He has collected a greater number of different species than any other traveller before him. He has secured three-fourths of the various species which were to be looked for in the districts through which he travelled.

He has, moreover, discovered several species the existence of which in or near German East Africa had not been suspected. Great interest was aroused, for instance, by his discovery of a striped hyæna, which other travellers imagined they had seen, but had not captured. This is the animal which I have designated *Hyæna schillingsi*. The author killed one specimen in 1896, but this unfortunately was not preserved. Now, however, the Berlin Natural History Museum contains quite a number of skins and skulls of this species, collected by Herr Schillings, in 1899 and 1900, on the Masai highlands. A new species of hill-antelope, or the klipspringer, has also been discovered by him, which Oscar Neumann has designated *Oreotragus schillingsi*. Among the Rodents there are also several new types, while there are several other species among the Ungulates which have still to be classified and named.

Herr Schillings' collections, then, provide a fund of the most interesting revelations. I only wish that other such collections could be made in other parts of German East Africa, when our knowledge would be sufficiently complete to enable me to bring up to date my own book upon the mammals of the country, published nine years ago.

LIST OF MAMMALS

COLLECTED BY

HERR C. G. SCHILLINGS.

[All [illegible] Schillings [illegible], with the exception of Nos. 109 and 115.]

COMPILED BY PROFESSOR P. MATSCHIE,

[illegible] Royal Natural History Museum at Berlin.

Apes

1. White-tailed guereza, *Colobus caudatus*, Thos.
2. Angolan guereza, *Colobus [illegible]*
3. Green monkey, *Cercopithecus [illegible]*, Ptrs.
4. Patas monkey, *Cercopithecus [illegible]*, Is. Geoff.
5. East African grivet monkey, *Cercopithecus [illegible]*, Neumann.
6. Coast baboon, [illegible], Thos.
7. [illegible], Mtsch.

Lemurs

8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible], Mtsch.

Bats

12. [illegible], Mtsch.
13. Large [illegible], Gray.
14. [illegible], Thos.
15. Lyre-bat, *Megaderma frons*, Geoff.
16. Falic vampire, *Megaderma cor*, Ptrs.
17. Dwarf bat, *Myotis nanus*, Ptrs.
18. Tricoloured bat, *Myotis tricolor*, Temm.
19. Geoffroy's bat, *Nycticejus borbonicus*, Geoffr.
20. Somali bat, *Vespertilio somalicus*, Thos.
21. Kirk's bat, *Kerivoula nidicola*, Kirk.
22. Bulldog-bat, *Nyctinomus pumilus*, [illegible]
23. Light-coloured bulldog-bat, *Nyctinomus [illegible]*, Ptrs.

Insectivora

24. Musk-rat, *Petrodromus sultani*, Thos.
25. Jumping shrew, *Rhynchocion usambara*, Neumann.
26. [illegible] shrew, *Macroscelides rufescens*, Ptrs.
27. Cinnamon shrew, *Crocidura gracilis*, Ptrs.
28. Dark grey shrew, *Crocidura fumosa*, Thos.
29. White-bellied shrew, *Crocidura [illegible]*, Pagenst.
30. Black shrew, *Crocidura aff. nigrescens*, Mtsch.
31. Hedgehog, *Erinaceus albiventris*, Wagn.

Beasts of Prey

32. Spotted hyæna, *Crocotta germinans*, Mtsch.
33. *Striped hyæna, *Hyæna schillingsi*, Mtsch.
34. Hyæna-dog, *Lycaon pictus*, Temm.
35. Long-eared fox, *Otocyon megalotis*, Desm. Aff.
36. Black-backed or silver jackal, *Thows schmidti*, Noack.
37. Striped jackal, *Canis holubi*, Lorenz.
38. Masai lion, *Uncia masaica*, Neum.
39. Ukamba lion, *Uncia somaliensis*, Noack.
40. Small-spotted Swahili leopard, *Leopardus suahelicus*, Neum.
41. Large-spotted Masai leopard, *Leopardus spec.*
42. Serval, *Zibethailurus capensis*, Gm. Perhaps in two species. Melanistic specimens also.
43. Wild cat, *Felis aff. libyca*, Oliv.
44. Caracal, *Caracal aff. nubicus*, Fitz.
45. Civet cat, *Viverra orientalis*, Mtsch.
46. Bush-genet, *Genetta suahelica*, Mtsch. Two black specimens also.
47. Velt-genet, *Genetta neumanni*, Mtsch.
48. Spotted genet, *Nandinia gerrardi*, Thos.
49. Short-tailed ichneumon, *Galera robusta*, Gray.
50. Great ichneumon, *Herpestes aff. caffer.*, Gm.
51. Ichneumon, *Herpestes aff. badius*, A. Sm.
52. White-tailed ichneumon, *Ichneumon aff. albicaudus*, G. Cuv.
53. Dwarf ichneumon, *Helogale varia*, Thos.
54. Striped ichneumon, *Crossarchus fasciatus*, Desm.
55. Ratel, *Mellivora ratel*, Sparrm.

Rodents

56. Hare, *Lepus victoriæ*, Thos.
57. Ground-squirrel, *Xerus fuscus*, Huet.
58. Jackson's squirrel, *Sciurus jacksoni*, Thos.
59. Green squirrel, *Sciurus ganana*, Rhoads.
60. Tawny squirrel, *Sciurus ochraceus*, Huet.
61. Grey squirrel, *Sciurus aruscensis*, Pagenst.
62. Johnston's dormouse, *Graphiurus johnstoni*, Thos.
63. Dwarf dormouse, *Graphiurus nanus*, True.
64. Blacked-headed tree-mouse, *Dendromys nigrifrons*, True.
65. Masai striped mouse, *Arvicanthis masaica*, Pagenst.
66. Neumann's striped mouse, *Arvicanthis neumanni*, Mtsch.
67. Peters' striped mouse, *Arvicanthis fallax*, Ptrs.
68. Grey mouse, *Mus chrysophilus*, Thos.
69. Grey rat, *Mus hildebrandti*, Ptrs.
70. Red mouse, *Mus dolichurus*, A. Sm.
71. Pigmy mouse, *Mus minimus*, Ptrs.
72. Böhm's gerbil, *Tatara boehmi*, Noack.
73. Peters' gerbil, *Dipodillus vicinus*, Ptrs.
74. Dwarf gerbil, *Dipodillus pusillus*, Ptrs.
75. *Fat-tailed mouse, *Steatomys spec. nov.*
76. Mole-rat, *Georhychus johnstoni*, Thos.
77. Elephant, *Elephas knochenhaueri*, Mtsch.
78. Tree-badger, *Dendrohyrax validus*, True.

* Species discovered by C. G. Schillings.

79. Neumann's tree-badger, *Dendrohyrax neumanni*, Mtsch.
80. Matschie's rock-badger, *Procavia matschiei*, Neumann.
81. Dwarf rock-badger, *Procavia johnstoni*, Thos.
82. Mozambique rock-badger, *Heterohyrax mosambicus*, Ptrs.
83. Böhm's zebra, *Hippotigris boehmi*, Mtsch.
84. Grant's zebra, *Hippotigris granti*, De Winton.
85. Rhinoceros, *Ceratorhinus aff. cucullatus*, Wagn.
86. Hippopotamus, *Hippopotamus aff. abyssinicus*, Less.
87. Wart-hog, *Phacochœrus aff. æthiopicus*, Schreb.
88.*Schillings' giraffe, *Giraffa schillingsi*, Mtsch.
89. Tippelskirch's giraffe, *Giraffa tippelskirchi*, Mtsch.
90. Pangani buffalo, *Buffelus suahelicus*, Mtsch. (not yet named) (?).
91. White-bearded brindled gnu, *Connochœtes albojubatus*, Thos.
92. Coke's hartebeest, *Bubalis cokei*, Gthr.
93. Neumann's hartebeest, *Bubalis neumanni*, Rothsch.
94. Tiang, *Damaliscus jimela*, Mtsch.
95. Red Duiker, *Cephalolophus harveyi*, Thos.
96. Peters' duiker, *Cephalolophus ocularis*, Ptrs.
97. Dik-dik, *Madoqua kirki*, Gthr.
98. Musk antelope, *Nesotragus moschatus*, Von Dub.
99. Dwarf steinbuck, *Raphiceros neumanni*, Mtsch.
100. Ourebi, *Ourebia hastata*, Ptrs.
101.*Klipspringer, *Oreotragus schillingsi*, Neum.
102. Waterbuck, *Cobus aff. ellipsiprymnus*, Ogilb.
103. Ward's reedbuck, *Cervicapra wardi*, Thos.
104. Chanler's reedbuck, *Cervicapra chanleri*, Rothsch.
105. Impalla (Impallah), *Aepyceros suara*, Mtsch.
106. Grant's gazelle, *Gazella granti*, Brooke.
107. Thomson's gazelle, *Gazella thomsoni*, Gthr.
108. Gerenuk gazelle, *Lithocranius walleri*, Brooks.
109.†Clarke's gazelle, *Ammodorcas clarkei*, Thos.
110. Fringe-eared oryx, *Oryx callotis*, Thos.
111. Kudu, *Strepsiceros strepsiceros* (Pall.).
112. Lesser kudu, *Strepsiceros imberbis*, Blyth.
113. Masai bushbuck, *Tragelaphus masaicus*, Neum.
114. Livingstone's eland, *Taurotragus livingstonei*, Sclat.

Edentate

115.‡Ant-bear, *Orycteropus wertheri*, Mtsch.

* Species discovered by C. G. Schillings.

† Only the horns secured by the author. The animal was probably killed by Askari police near Masinde. The author cannot vouch for its belonging to the district.

‡ Secured by the author near Kilimanjaro.

APPENDIX B

A Synopsis of Herr C. G. Schillings' Collection of Birds

COMPILED BY

PROFESSOR A. REICHENOW

WITH REMARKS UPON THEIR DISTRIBUTION AND HABITS BY C. G. SCHILLINGS

[*The references followed by numerals give the name of the place and the date at which the specimens were secured.*]

THE collection of birds brought together by Herr C. G. Schillings, as the result chiefly of his last three expeditions in East Africa, and in part presented by him to the Royal Zoological Museum in Berlin, comprises more than 1,000 skins, belonging to 355 species, and is one of the most comprehensive ever yet achieved in those regions. Unfortunately, a number of other skins—about 350 in all—were lost by the collector during their transport to Europe.

Besides five newly discovered forms—namely, *Pseudogyps africanus schillingsi* Erl.; *Ploceus schillingsi*, Rchw.; *Erythropygia plebeia*, Rchw.; *Cisticola schillingsi*, Rchw.; and *Calamocichla schillingsi*, Rchw.—a number of these have now been found for the first time in the country traversed, such as *Recurvirostra avocetta*; *Eupodotis*

gandiana; *Accipiter nisus* (the European sparrow-hawk), which had not hitherto been found south of Kordofan; *Irrisor senegalensis somaliensis*; *Apus æquatorialis*; *Anthus caffer*, hitherto unknown outside South Africa; *Anthoscopus musculus*; and others. Yet other species, such as *Parus fringillinus* and *Calandrella athensis*, were hitherto known in only one or but a few variations. Of great scientific value also are series of birds of many kinds, notably several francolins and ducks and geese.

Struthionidæ

1. *Struthio masaicus*, Neum. The Masai velt. Kebaya Masai, IV.; ol Donje l'Engai, X.; Kitumbin, X.; Njiri, V.

Often observed on the velt. In August, 18 young ones, but full grown, in a flock on the left bank of the Pangani, by the Masimani Mountains; in March, a flock of 64 old birds, of which 12 were hens. Throughout the year single cocks were noted, and some pairs, as well sometimes as one cock with two hens; or two cocks with two hens were found together, as well as larger flocks numbering up to 15. Nests with 8, 12, 17, and up to 25 eggs were found in September and October. By day the hens seem to brood, the cock sometimes being found not far from the nest. I found young birds only just out of their shells in November (Ngaptukberg); others some days old in October and November. Once in September I found 22 ostriches together, both sexes mixed, on the Ngaruka velt. Other places where I found them were Buiko, near Pangani, Arusha Chini, Meru Mountain, Ngaruka, Kitumbin Volcano, Geleï Volcano, Matiom Plains, Lake Nakuro, Ukambani, Lake Naiwasha (to the east of it), Ukamba, and Mto Simba, between Kibwesi and Taveta. At the end of February a perfected egg ready for laying in otherwise inactive ovary—the result of copious feeding on freshly sprouting grass. Twice observed bathing in pools. Troubled by lice (*Hippobosca struthionis*, Olf.)?

Colymbidæ

2. *Colymbus capensis* ([Lcht.] Salvad.). Njiri, II., VI.; Lake Nakuro, I. With young ones about two days old on Feb. 15th on a small pool of rainwater, in a wood between Kibwesi and Kilimanjaro. Frequently on the Njiri Lakes and Merker Lakes. Very often on Lake Nakuro and Lake Nayasha in January.

Laridæ

3. *Gelochelidon nilotica* (Hasselg.). The Masai country, Pangani swamps, Heck Island, VIII. Seen only in numbers on Heck Island in Pangani in August.

4. *Hydrochelidon leucoptera* (Schinz). Njiri, II., VI.; Pangani swamps, Heck Island, VIII; Lake Natron, IX. Seen often on the Njiri Lakes and on Lake Natron.

Phalacrocoracidæ

5. *Phalacrocorax lucidus lugubris* Rüpp. Merker Lakes, XI. This great cormorant was observed by me only on the Merker Lakes, Lake Natron, and the Njiri Lakes. While on the wing it gave out a curious whistling kind of cry.

6. *Phalacrocorax africanus* (Gm.). Bagamoyo, VII. Seen everywhere frequently, in the coast region between Dar-es-Salaam and Tanga, as well as on rivers and lakes.

7. *Anhinga rufa* (Lacèp. Daud.). Central Pangani, III. Brooding. This strange-looking bird with a snake-like neck I found nesting halfway up the Pangani River. Its nests were in the branches of acacia-trees stretching over the river, about 14 or 15 feet above the water. I found them only on small islands in the middle of the stream. The eggs are of a bluish colour and covered with a strong coating of chalk.

Pelecanidæ

8. *Pelecanus roseus* Gm. On the Victoria Nyanza, the Merker Lakes, XI.; Lake Nayasha, I., frequently. On the Njiri swamps, VI., seldom.

Anatidæ

9. *Nyroca capensis* ([Cuv.] Less.) Merker Lakes near Meru Mountain, XI. This beautiful diving-bird is not often found on the lakes in the Masai country. Fully grown young birds I found in July.

10. *Spatula clypeata* (L.). The Masai country, Eastern Njiri swamps, XII.

Of the European shoveller, I have seen and shot only three specimens on the Eastern Njiri swamps.

11. *Anas erythrorhyncha* Gm. Njiri, II., VI.; Merker Lakes, X.

Fully grown young birds were to be met with frequently on the Njiri swamps in June and July.

12. *Anas punctata* Burch. Merker Lakes, XI.; Njiri, II., VI.

13. *Dendrocygna viduata* (L.). Western Njiri, II.; Lake Natron, X.; Victoria Nyanza, X.

Comparatively seldom found in the Masai district.

14. *Nettopus auritus* (Bodd.). Western Njiri, VII.

These also I have had few opportunities of observing.

15. *Sarcidiornis melanotus* (Penn.). Victoria Nyanza, XI.

16. *Chenalopex aegyptiacus* (L.). Central Pangani, IV. *Dunenjunge.*

To be met with all over the Masai district on lakes and rivers of all sizes. Their warning cries, a sort of quack or gabble, draw attention to them, whether they are up on the drier branches of trees or on the wing. On August 27th, 1899, I found a pair of Egyptian geese near the Pangani River with young ones about a fortnight old. The goose allowed me to get within about fifteen paces of her before she flew away. They are very frequently to be met with on meadows adjoining the river, and they are not very timid. In the middle of July I came upon unfledged young birds.

17. *Plectropterus gambensis* (L.). Pangani River, III.

Great flocks of them in March 1903, halfway up the Rufu River, near the Lafitti Hills. To the south of Kilimanjaro, on small pools on the velt in September. Frequently on the Njiri swamps. Often fly away out of the swamps in the evening to the grassy plains *zur äsung.*

Charadriidæ

18. *Glareola fusca* (L.). The Masai country. Heck Island, VIII.; Njiri swamps, VI.

I found these very numerous on Heck Island in August 1899; also on the Njiri swamps in July. At the beginning of August they brought stalks and blades of grass to the island in their bills.

19. *Cursorius temmincki*—Sw. Central Pangani, III.

20. *Rhinoptilus bisignatus* (Hartl.). Yumbe ya Mawe in Central Pangani, IV.

21. *Rhinoptilus cinctus* (Heugl.). Dönje Erok, IX.

22. *Charadrius geoffroyi* Wagl. The Masai country.

23. *Charadrius asiaticus* Pall. Merker Lakes, XI.

24. *Charadrius marginatus tenellus* Hartl. The Masai country.

25. *Charadrius varius* Vieill. Njiri, II., VI.; Yumbe ya Mawe, IV.

26. *Charadrius tricollaris* Vieill. The Masai country, VI.

One of a large flock which I came upon in the evening near Sadani on a sandy spot near the sea.

27. *Stephanibyx coronatus* (Bodd.). Njiri, II., VI.

Frequent everywhere upon the dry velt. It gives out its clear warning-cry on moonlight nights as at other times, and frequently when flying over the camp.

28. *Hoplopterus speciosus* ([Lcht.] Wagl.). Njiri, II., VI.

Small spur-winged lapwings on June 12th, 1903; in pairs June—July to October. The call is curiously weak, and not audible far off. The bearing is very different from that of the species above mentioned, being quiet and melancholy. Mostly to be found in damp spots near water.

29. *Œdicnemus capensis* Lcht. Njiri, II., VI.

I frequently found this bird on the driest velt under acacia-bushes, where he makes his escape at a run. I have killed a specimen on the road up to the Moshi station at a height of 1,600 metres.

30. *Œdicnemus vermiculatus*, Cab. Njiri, III.; Moshi, VIII.

I found thicknees mating and breeding on the Rufu River at the end of February. Towards evening they flew over the waters, giving out their clear, recurring notes.

Dromadidæ

31. *Dromas ardeola* Payk. Sadani, Bagamoyo, the Coast, IV., VI.

I often found drab-plover together with different kinds of herons on the coast

Scolopacidæ

32. *Recurvirostra avocetta*, L. Njiri, V., VI.; younger ones on the Merker Lakes, XI.

Avocets, now rarely seen breeding on the German seaboard, I found nesting in large numbers in June 1903 on the Western Njiri marshes. I found them also often on the salt and alkaline swamps all round. Their movements are very curious and interesting when their nests or young are in danger. They fly hither and thither with incessant clear cries, now plunging into the shallow water, now bending down over the surface and darting from one island of reeds to another; then going out into the deeper water, then rising again into the air. The way their legs hang down is very peculiar.

33. *Himantopus himantopus* (L.). Yumbe ya Mawe, IV.; Merker Lakes, XI.

The black-winged stilt I had many opportunities of watching. I saw three specimens in July on the coast between Bagamoyo and Pangani. I saw numbers in October on the Natron Lake and Victoria Nyanza, in November on the Merker Lakes, and in January on Nakura Lake and on the Elmentaita and Nayasha Lakes.

34. *Pavoncella pugnax* (L.). Merker Lakes, XI.

35. *Totanus littoreus* (L.). Yumbe ya Mawe, IX.; Nguaso Nyiro, X.

36. *Totanus ochropus* (L.). Upper Pangani, V.; Merker Lakes, XI.

37. *Totanus glareola* (L.). The Masai country.

I have seen these only in the winter months on a few occasions.

38. *Tringoides hypoleucus* (L.). The Masai country, Kibaya Masai, III.

I found these all the year round on every kind of water.

39. *Tringa ferruginea* (Brünn.). Njiri, VI.

40. *Tringa minuta*, Leisl. The Masai country, XI.

One of these birds remained on a pool within my camp for a whole day in November.

41. *Calidris arenaria* (L.). Tanga, XII.

42. *Numenius arquatus* (L.). On the coast near Pangani.

Very shy and difficult to approach.

43. *Gallinago media* (Frisch.). The Kahe velt, IV.

I found these mating in April.

44. *Gallinago nigripennis*, Bp. Merker Lakes, XI.

These snipe were so numerous in the autumn that I was able to kill twenty-six one evening, and watched hundreds of them.

45. *Rostratula bengalensis* (L.). Njiri, IV.; Masimani velt, II.

I only saw the painted snipe on a few occasions, chiefly upon small, evil-smelling pools in the swamp districts, surrounded by dense bushes. When startled they let themselves down quickly. Their flight is unsteady, and their legs dangle curiously.

Otididæ

46. *Eupodotis kori*, Burch. Ngaptuk, XI.; Dönje Erok, IX.; Dönje Ngai, VIII.

Kori bustards are found all over the dry plains. Easy to shoot at midday, but very shy in the morning and evening. When shot at they give out a deep, hoarse cry. At midday they rest in the shade of the bushes.

47. *Eupodotis canicollis*, Rchw. Njiri, III.; Dönje Erok, IX.; Ngaptuk, X.

I found a newly laid egg of this bustard in July. It is of a pale yellowish-brown colour, with reddish brown and blue spots; it is spherical in shape, and measures 59 × 54 millimetres.

48. *Eupodotis gindiana* (Oust). Marago Kanga, V.

A newly laid egg of this bustard was brought to me, measuring 52 × 44 millimetres. The evolutions of the bird on the wing are very quaint and comical.

Gruidæ

49. *Balearica regulorum gibbericeps*, Rchw. Merker Lake.

I found this crane mating in July. In September and January I came upon great flocks of them on Kilimanjaro. I found many also in Kavirondo, on the Nguaso-Nyiro River, and on the Nayasha Lake. At night they utter a curiously grating kind of cry.

Parridæ

50. *Actophilus africanus* (Gm.). Rufu River, VI.; Njiri swamps, VII., VIII.

I found the floating nests of this jacana in July on the swamps, with its wonderfully coloured eggs not yet nearly hatched.

51. *Microparra capensis* (A. Sm.). Western Njiri swamps, VII.

I brought down a pair on July 6th. At some distance from the river they were not very shy.

Rallidæ

52. *Crex crex* (L.) Central Pangani, III.

I have seldom been able to start corncrakes from out of the reeds.

53. *Limnocorax niger* (Gm.). Dönje Erok, VIII.; Rufu River, III.; Njiri swamps, VII.; Kibaya Masai, III.

This bird gives out a very distinctive cry.

54. *Ortygometra pusilla obscura* (Neum.). Njiri swamps, VI.

Seen three times; killed once.

55. *Gallinula chloropus* (L.). Njiri swamps, VII.

Moorhens I found also in large numbers on Lake Nayasha.

56. *Fulica cristata*, Gm. Lakes Nakuro and Nayasha and the western swamps, VII.

Great flocks in January on Lake Nayasha. I cannot subscribe to O. Neumann's statement that these coots dislike warm waters.

Turnicidæ

57. *Turnix lepurana* (A. Sm.). Ngaptuk, X.; Njiri, VI.

I found hemipodes breeding in May; young ones somewhat later. They have a curious whizzing kind of flight, the hen coming down again very soon in a strange upright position, with wings outstretched. They get wind of dogs very quickly. When started without dogs they are difficult to come upon again.

Pteroclidæ

58. *Pterocles gutturalis saturatior*, Hart. Dönje Erok, VIII.; Njiri, V.; West of Kilimanjaro, VIII.

59. *Pterocles decoratus*, Cab. Njiri, VI.; Yumbe ya Mawe, IV.

60. *Pteroclurus exustus* (Tem.). Dönje Erok, VIII.; Njiri, VI

These three species of sandgrouse are somewhat shy. In dry weather—July, August, and September—they came singly and in flocks, a little before sunrise, to certain special watering-places; the flocks run to about thirty birds. They come down to the surface of the water from a great height, and with lively cries. Their flight is rapid. On the wing, all sandgrouse, but *Pt. gutturalis* especially, resemble woodcock to some extent.

Ibididæ

61. *Ibis æthiopica* (Lath.). Masimani, III.; Nguaso-Nyiro, X.

I found the sacred ibis somewhat shy, and on the *qui vive.*

62. *Theristicus hagedasch* (Lath.) Masimani, III.

There is scarcely any bird-note more distinctive to the Masai district than that of the *hagedasch*; it gives out its ringing cry, "*Haheia, haheia, mackeia!*" mostly towards evening.

63. *Plegadis autumnalis* (Hasselq.) Victoria Nyanza, IX.

Ciconiidæ

64. *Leptoptilous crumenifer* ([Cuv.] Less.). The Masai country.

Marabous are found all over the district. They pass the night in flocks of as many as a hundred on large trees upon the banks

of rivers. Great concourses of them prey upon the locusts. Unfortunately they are killed in great numbers for their feathers. Even when caught fully grown they become surprisingly tame.

65. *Abdimia abdimi* (Lcht.). Pangani swamps, III.

Found combining forces with storks to prey upon the locusts.

66. *Tantalus ibis*, L. A breeding-colony, Pangani River, VII.

A large breeding-colony on the trees on an island in the Rufu River. Big young ones in July. The colony was broken up the year after.

67. *Ciconia ciconia* (L.). Pangani swamps, III.; Kikuyu, I.

White storks are to be found wintering in great numbers in Equatorial East Africa. In March, and at the beginning of April, I saw great flocks of them lying in wait for locusts. In January 1896 I saw over two hundred on Lake Nayasha

68. *Anastomus lamelligerus*, Tem. Pangani River, III.

Found in 1896 and 1900 on the Rufu River, where Prince Johannes Löwenstein killed some also in 1903. Frequently met with on the Manga Lakes.

69. *Ephippiorhynchus senegalensis* (Shaw). Masai-land.

I met with pairs on a few occasions. This saddle-billed stork has a beautiful action on the wing, floating along slowly. Found them mating in August.

Phœnicopteridæ

70. *Phœnicopterus roseus*, Pall. The velt between Kilimanjaro and Meru Mountain, XI.; Nguaso-Nyiro, X.

71. *Phœnicopterus minor*, Geoff. The velt between Kilimanjaro and Meru Mountain, XI.; Nguaso-Nyiro, X.

Flamingoes are to be seen in thousands on Lake Natron. Both species frequent in November the small pools on the velt, alive with crabs. The old birds are distinguishable by their beautiful red colouring.

Scopidæ

72. *Scopus umbretta*, Gm. Masai country, X.

I found the eggs of the umbrette in October, three at a time.

Ardeidæ

73. *Nycticorax nycticorax* (L.). Pangani swamps, III.

I killed only one night-heron, on Heck Island.

74. *Nycticorax leuconotus* (Wagl.). Central Pangani, III.

75. *Butorides atricapillus* (Afzel.). Central Pangani, III.

76. *Ardetta sturmi* (Wagl.). Masangoleni, II.; Kibaya Masai, III.

77. *Bubulcus ibis* (L.). Pangani.

I found single specimens breeding by Pangani.

78. *Ardea melanocephala*, Vig. Childr. Masimani, III.

I found the eggs of this heron at the end of March. The nests are very like those of the European heron.

79. *Ardea goliath*, Cretzschm. Rufu River, Athi River, Kikuyu, I., IV.

I found giant herons comparatively seldom on rivers and lakes.

80. *Melanophoyx ardesiaca* (Wagl.). Dar-es-Salaam, IV.; Tanga, VI.

81. *Herodias alba* (L.). Central Pangani, III.; Njiri, VII.

82. *Herodias gularis* (Bosc.). Sadaani. Sea-coast, V.

83. *Herodias garzetta* (L.). Pangani River, V.; Njiri, VII.

These egrets are comparatively shy and cautious. Thousands of them on their breeding-place near Tanga were slaughtered by feather-hunters. Shooting regulations are much needed in regard to these birds.

Columbidæ

84. *Vinago calva nudirostris*, Sw. Dönje Erok, X.; Buiko, VI.

I have seldom come across this species of dove, and found it shy.

85. *Columba aquatrix*, Tem. West of Kilimanjaro, VII.

Half-grown young ones in nest. These beautiful large doves are very like our ringdoves. They were to be found (among other places) in the region west of Kilimanjaro in very large numbers in July, at a height of about 7,000 ft. They were after the berries of a kind of *Euclea* tree, known to the Masai as "Leurién." I found

young ones in the nests at this time. I have only once seen this dove on the plains.

86. *Turtur senegalensis* (L.). Njiri, VI.; Ngaptuk, X.; West of Kilimanjaro, VIII.

87. *Turtur lugens* (Rüpp.). Njiri, VIII.; West of Kilimanjaro, VIII.

88. *Turtur semitorquatus* (Rüpp.). Moshi, IV., XII.; West of Kilimanjaro, VIII.

89. *Turtur capicola tropica*, Rchw. Njiri, VIII.; Ngaptuk, X.; Moshi, XI.; West of Kilimanjaro, VIII.

90. *Turtur ambiguus perspicillatus* Fsch., Rchw. Njiri, V., VIII.; West of Kilimanjaro, VIII.

This bird has a very peculiar call.

91. *Tympanistria tympanistria* (Tem.). Moshi, IV., XII.

92. *Chalcopelia chalcospilos* (Wagl.). Dönje Erok, Ngaptuk, X.; Moshi, XII.

93. *Chalcopelia afra* (L.). Moshi, XI., XII.

94. *Œna capensis* (L.) The middle reaches of the Pangani, III.; Ngaptuk, X.

This long-tailed dwarf pigeon darts, like a badly directed arrow, hither and thither.

Phasianidæ

95. *Numida reichenowi*, Grant. Njiri, V.

96. *Acryllium vulturinum* (Hardw.) Pangani, III. Vulturine guinea-fowl: Njiri, V.; Moshi, IV.

These guinea-fowl are in the habit of scraping and scratching the soil to such an extent that in one case they caused me to lose track of a rhinoceros. The birds so rake up the velt for some distance near their drinking-place that it looks like a riding-school or drill-ground, as Reichenow has remarked in his work.*

97. *Pternistes leucoscopus infuscatus*, Cab. Pangani, VII.; Dönje Erok, IX.; Westerly range of Kilimanjaro, VII.; Marango Kanga, V., IX.

* Dr. Ant. Reichenow, *The Birds of German East Africa (Die Vögel Deutsch Ost-Afrikas).*

About dawn the yellow-breasted francolin likes to perch on the branches of trees brought down to the ground by velt-fires. This bird hides itself in the thick grass as soon as a human being approaches. So far as I have observed, the very old cocks are of a rather dark colour. Their clear penetrating call sounds like "ggrruaei ggrruaei djrruai."

98. *Francolinus schütti*, Cab. Kilimanjaro, VIII.

This gorgeously plumed francolin is addicted to the mountain-woods, especially near the smaller clearings or belts of the forest. I found very young ones, just hatched, at the beginning of June. Only once have I seen these birds on the wing on the tableland (about 5,000 feet above sea-level). Their startlingly clear call when taking flight sounds like "terrr."

99. *Francolinus hildebrandti*, Cab. Dönje Erok, IX.; Ngaptuk, X.

This francolin does not live on the open velt. It is only met with in well-wooded, mountainous stretches of the country, which offer plenty of covert.

100. *Francolinus uluensis*, Grant. Dönje Erok, IX.; Ngaptuk, X.; westerly ranges of Kilimanjaro, VII., VIII.

This francolin is an inhabitant of the high African tableland. It is frequently met with on the grassy slopes, and hilly and rock-strewn plains on the west of Kilimanjaro. According to my observations, this bird, in its appearance and habits, much resembles the common partridge. Its call is similar to that of *Francolinus granti*, but its rhythm differs, and the call of the African partridge sounds more like that of *Perdix cinerea* (European common partridge). Towards nightfall its penetrating call sounds something like "grüdjitjidjidje, grütjitjidjidje,' the notes well concentrated and not sharply accentuated.

101. *Francolinus granti*, Hartl. Dönje Erok, VIII., IX.; Yumbe ya Mawe, IV.; Kimishira, westerly ranges of Kilimanjaro, VII., VIII.

The clear, sharp penetrating call of this small francolin sounds like "kü djidji, kü djidje, kü djidje." When the bird is startled and rising on the wing the call sounds like "kidjirédjirédjirédjire."

102. *Coturnix delegorguei*, Deleg. Njiri II., VI.

This quail is found in June near the sea-coast and is particularly common between the Pangani and Sadaani Rivers, a few miles inland. The natives of Satiko have the birds on sale in little cages, made of reeds, with small shells as receptacles for water.

Vulturidæ

103. *Otogyps auricularis* (Daud.). Dönje Erok, VII.

In the year 1897 I was able to establish the fact for the first time that this large vulture is to be found in the Masai country. One or more specimens may be noticed among large gatherings of other vultures.

104. *Lophogyps occipitalis* (Burch). Dönje Erok, VIII., IX.; Njiri, VII.

105.* *Pseudogyps africanus schillingsi*, Erl. Dönje Erok, VIII., IX.; Njiri, VII.

This vulture was discovered by myself. My late and lamented friend Baron Carlo von Erlanger described and named this species. I collected about ten specimens in the westerly ranges of Kilimanjaro, but I am sorry to say I lost all of them in a consignment sent to Europe, which went astray. This species mates at the beginning of May; its eyries are to be found in the top branches of high acacia-trees. I secured some young ones, nearly fully fledged at the end of August. I also collected an egg, which presumably belongs to this species, in the westerly swamps of the Njiri. This egg is of a whitish colour, top and bottom are blunted; its size size is 87 × 65 mm.

106. *Gyps rüppelli*, Bp. Njiri, VI.

Rüppell's vulture is frequently met with in the Njiri district. Very old birds may be distinguished by their light plumage, as Carlo von Erlanger states.

107. *Neophron monachus*, Tem. Njiri, V.

This carrion vulture is met everywhere in these regions, and feeds on human excrement. It appears in the early dawn.

* The species marked by an asterisk were discovered by the author.

before the larger vultures gather, to feed on the carrion, and is a remarkably tame bird.

108. *Neophron percnopterus* (L.). Masai-land IV., VII.; Ol Donje l'Engai, VIII.

The Egyptian vulture or aasvogel is very rarely met with in these regions.

Falconidæ

109. *Serpentarius secretarius* (Miller).

The secretary-bird is extremely clever at keeping out of the range of a gun. Should the hunter approach too closely, it commences to run with extreme rapidity. The gait is rather clumsy, and reminds one of the trot of mammals. The bird is rather rare in this district, but is not easily overlooked on account of his peculiar shape.

110. *Melierax poliopterus*, Cab. Masai-land.

111. *Circus pyargus* (L.). Middle ranges of the Pangani Valley, III.

Very numerous in January on the plains of the lake-districts of Naivasha, Elmentaita, and Nakuro.

112. *Circus macrurus* (Gm.). Ngaptuk, X. Kiaragua.

113. *Circus ranivorus* (Daud.). Between Kilimanjaro and Meru Mountain, XI.

114. *Astur tachiro* (Daud.). Moshi, VIII.

115. *Astur melanoleucus* (A. Sm.). Aruja Djou, IX.

116. *Accipiter nisus* (L.). between Kilimanjaro and Meru Mountains, XI.

The sparrow-hawk was never before traced so far south. I killed a female in November 1903.

117. *Accipiter minullus tropicalis* (Rchw.). Dönje Erok, IX.

118. *Kaupifalco monogrammicus* (Tem.). Korogwe, VII.

119. *Lophoäetus occipitalis* (Daud.) Victoria Nyanza, XI.

I found this hawk between Sotika and Lumbwa and killed a specimen.

120. *Aquila rapax* (Tem.). Masai-land, X. IX. XII.

The tawny eagle, which feeds on carrion, is common.

121. *Haliäetus vocifer* (Daud.). Masai-land.

This sea-eagle is to be seen everywhere on African rivers and lakes, and is easily recognised by its loud and clear call.

122. *Pandion haliäetus* (L.). Bagamo, VI.

Ospreys occur near the sea coast. Not observed by myself inland.

123. *Buteo desertorum* (Daud). Nayasha Lake, I.

124. *Buteo augur* Rüpp. Dönje Erok, XI.

125. *Milvus ægyptius* (Gm.). Masai-land.

The Egyptian black kite is very tame when not molested, and swoops down on the meat thrown away near the camp, and sometimes carries off meat offered to it. Its evolutions in flight are amusing to the weary and lonely traveller. Bird-skins spread out to dry have to be guarded against its attacks.

126. *Helotarsus ecaudatus* (Daud.). Masai-land, V., XI., XII.

The bateleur eagle feeds only occasionally on carrion. I always found it to be a shy and cautious bird, and have observed it carrying serpents into mid-air. I nearly killed, with a stick, one bird which had fallen asleep and lay on the soil of the forest about midday. The bateleur eagle goes through wonderful evolutions in its flight.

127. *Falco biarmicus* (Tem.). Eldoma ravine, I., British East Africa.

This falcon joined other birds of prey in their chase of locusts, which were swarming in tremendous clouds across country. I shot one which had its stomach filled with a large number of locusts.

128. *Falco minor* (Bp.). Ngaptuk.

A couple of these falcons were found near my camp on the Ngaptuku Mountain. All other birds were frightened when these falcons made their appearance.

129. *Cerchneis vespertina* (L.). Middle reaches of the Pangani, III.; Yumbe ya Mawe, IV.

Large flocks of red-footed falcons and lesser kestrels made war upon locusts about April.

130. *Cerchneis tinnunculus* (L.). Masai-land, Pangani River, II.

I only killed one kestrel in February.

131. *Cerchneis neumanni* (Fleisch.). Middle ranges of Pangani, III.

Strigidæ

132. *Bubo lacteus* (Tem.). Yumbe ya Mawe, IV.; Njiri, VI.

I have met with this eagle-owl not more more than ten times during my travels.

133. *Pisorhina capensis* (A. Sm.). Pare mountains, III.

I found this owl in the middle of leafy shrub. A crowd of little birds molested it. When wounded it uttered a peculiar snarling, growling kind of sound.

134. *Asio nisuella* (Daud.). Ngare Rongai, V.

This long-eared owl was met with in the high grass of the velt. I tried to shoot at it on different occasions, but found it very shy, and it was only after repeated attempts that I secured a specimen.

135. *Asio leucotis* (Tem.). Dönje Erok, X., XI.; ol Donjo l'Engai, XI., X.

136. *Glaucidium perlatum* (Vieill.). Dönje Erok, VIII.; Ngaptuk, X.

Very characteristic is the call of this little wood-owl, heard about midday during the hottest time. It sounds very much like the chromatic scale of Höhöhöhöhöhu-i-u. The night-call resembles that of the European wood-owl, only a trifle more subdued. This owl hides in the top branches of high acacia-trees.

137. *Syrnium woodfordi* (A. Sm.). Sadaani Plains, VI.

138. *Strix flammea maculata*, Brehm. Forests of the Pangani River, VIII., hatching its young.

On August 9th I found a spotted barn-owl sitting on two new-laid eggs in an abandoned nest of an umbrette.

Psittacidæ

139. *Poiocephalus rufiventris* (Rüpp.). Taveta, II.; Ngaptuk, X.; Djipe Lake, XII.; middle ranges of Pangani, III., IV.; Kiniarok Lakes, III.

These parrots sail through the air flapping their wings in a

peculiarly rapid manner, screaming loudly and clearly all the while. Their nests are mostly placed in baobab-trees.

140. *Poiocephalus masaicus* (Fschr., Rchw.). Nayasha Lake, I.

Musophagidæ

141. *Chizaerhis leucogastra* (Rüpp.). Dönje Erok, VIII., IX.; Ngaptuk, X.

The alarum-turaco is well named, the inexperienced traveller being easily deceived by its imitation of a sheep's bleating or dog's barking. Sometimes these birds are rather tame; generally speaking, they are of a distrustful nature. Turacoes have a curiously clever way of slipping through the thorny acacia-scrub without hurting themselves. They perch on the top branches of thorn-bushes just as other birds do on leafy trees, and are there entirely protected against the attacks of birds of prey. I found only green seeds in their stomachs.

142. *Turacus hartlaubi* (Fschr., Rchw.). Dönje Erok, XIII.

Cuculidæ

143. *Centropus superciliosus*, Hempr., Ehr. Merker Lakes, XI.; Njiri, VI.; Moshi, IV.

The penetrating call of this cuckoo, sometimes heard at night, is one of the characteristic bird-cries of the velt. The nests are disorderly, loose structures, built not very high from the ground, in shrubs; I found the white eggs in March.

144. *Clamator glandarius* (L.). Victoria Nyanza, XII.

145. *Clamator jacobinus* (Bodd.). Yumbe ya Mawe, IV.; Lafitti Mountain, III.; middle reaches of the Pangani, III.; Moshi, XII.

146. *Cuculus solitarius*, Step. Middle reaches of the Pangani, III.; Merker Lakes, XI.; Djipe Lake, XII.; Moshi, XII.

The call of this cuckoo has three peculiar notes. One hears it frequently at night, and it resembles then the call of an owl. The bird is very shy.

147. *Cuculus canorus*, L. Middle reaches of the Pangani, III.; Moshi, IV.

148. *Chrysococcyx cupreus* (Bodd.). Middle reaches of the Pangani, III.; middle reaches of the Rufu, III.

Young ones were found in the nest of weaver-birds. The golden cuckoo shows a preference for depositing its eggs in the nests of *Ploceus schillingsi*, Rchw., which are hung from twigs depending over the water. In March I came across a number of young golden cuckoos, which had ousted the brood of the weaver-birds.

149. *Chrysococcyx klaasi* (Steph.). Moshi, IV., XII.

Contrary to O. Neumann's experience, I met with the lesser golden cuckoo constantly in the neighbourhood of Moshi the whole year round. Neumann only found *Ch. cupreus*, and, later on, *Ch. klaasi* near the Victoria Nyanza.

Indicatoridæ

150. *Indicator indicator* (Gm.). Dönje Erok, IX.; Ngaptuk, X.

I have never been able to ascertain whether the honey-guide itself feeds on the honey or bees after guiding the traveller to the hive.

151. *Indicator major*, Steph. Kilimanjaro, VIII.; Geleï Volcano tableland, X.

152. *Indicator minor*, Steph. Merker Lakes, XI.

Capitonidæ

153. *Lybius melanopterus* (Ptrs.). Kirarágua, XI.; Moshi, XI.

154. *Tricholæma lacrymosum*, Cab. Dönje Erok, XI.; Ngaptuk, X.; Moshi, XII.

155. *Buccanodon kilimense* (Shell.). Kilimanjaro, XI.

A young bird with a whitish beak, not known before in this State.

156. *Barbatula affinis*, Rchw. Ngaptuk, X.; Matiom Mountains, X.

157. *Trachyphonus erythrocephalus*, Cab. Dönje Erok, VIII.

158. *Trachyphonus boehmi*, Fsch., Rchw. Mombo, II. (eggs in a hollow); Dönje Erok, IX.; Djipe Lake.

I found a nest of this bird in a mouse-hole in the middle of a caravan-road, about February.

Picidæ

159. *Dendromus chrysurus suahelicus*, Rchw. Moshi, IV.

160. *Dendromus nubicus* (Gm.). Middle reaches of the Pangani, III.; Ngaptuk, X.; Dönje Erok, VIII.; Moshi, IV.

161. *Mesopicus spodocephalus rhodeogaster* (Fschr., Rchw.). Njiri, V., VI., VII.; Dönje Erok, VIII.; middle reaches of the Pangani, III.; Ol Donje l'Eng ai, X.

162. *Mesopicus namaquus* (A. Leht.). Njiri, II. VI.

163. *Dendropicus hartlaubi*, Malh. Njiri, V.; Yumbe ya Mawe, IV.; Dönje Erok, VIII., IX.; Ngaptuk, X.; Moshi, IV.; westerly ranges of Kilimanjaro, VII.

I have occasionally seen woodpeckers perched on branches, but I am sorry to say my notes got lost with a consignment of birdskins forwarded to Europe.

Dendromus nubicus, *Mesopicus spodocephalus*, and *Dendropicus hartlaubi* were found by me in September, gathering in large flocks round the hills of the white-ant.

Coliidæ

164. *Colius leucotis affinis*, Shell. Moshi, IV., XII., XIII.

At starting colies fly in a buzzing manner, flapping their wings frequently; they sail afterwards quickly along with extended wings, without any movements or strokes, but before perching on a shrub, they flap their wings again in a violent manner. They hide themselves in bushes or shrubs which are overgrown with creepers.

Trogonidæ

165. *Heterotrogon vittatum* (Shell.) W. Kilimanjaro, VIII., at a height of about 5,000 feet.

I met this beautiful many-coloured trogon near the forest-belt. It was perched on a branch, and without fear whirled its wings in a peculiar manner, uttering all the while a low plaintive call.

Coraciidæ

166. *Coracias garrulus*, L. Masai-land.

167. *Coracias caudatus*, L. Dönje Erok, VIII., IX.; Ngaptuk, X.

168. *Eurystomus afer* (Lath.). Moshi, XII.

Bucerotidæ

169. *Bucorvus cafer* (Schleg.). Pare Mountains, III.; easterly Njiri swamps, V.

170. *Bycanistes cristatus* (Rüpp.). Pare-ya-Pesa, III.; Meru Mountains, VIII.

171. *Lophoceros melanoleucus* (A. Leht.). Masai-land.

172. *Lophoceros erythorhynchus* (Tem.). Njiri, VIII.; Dönje Erok, VIII.

The hornbills are extremely wary and shy. Approaching the hunter, they change their direction at the last moment, so avoiding the gunshot. Captive birds are very tame and docile, and show surprising mental capacity. They are easiest to shoot from an ambush among fruit-trees.

Alcedinidæ

173. *Ceryle rudis* (L.). Pangani River, III.

174. *Halcyon chelicuti* (Stanley). Korongo (middle reaches of the Rufu), III.; Ngaptuk, X.

175. *Halcyon albiventris orientalis*, Ptrs. Moshi, IV.

176. *Halcyon semicæruleus hyacinthinus*, Rchw. Korongo, III.

A kingfisher startled by myself one evening at the end of October, returned continually to a candelabra euphorbia-tree, but I could not discover its nest.

177. *Ispidina picta* (Bodd.). Moshi, IV.

Meropidæ

178. *Melittophagus meridionalis*, Sharpe. Njiri, V. VIII.; Dönje Erok, VIII.

179. *Melittophagus cyanostictus* (Cab.). Ngaptuk, I.; Geleï Volcano table-land, X.; Moshi, IV.

180. *Melittophagus bullockoides* (A. Sm.). Kirarágua, XI.; Nakuro Lake, I.

181. *Merops albicollis* (Vieill.) Djipe Lake, XII.

182. *Merops persicus* Pall. Masai-land.

Bee-eaters very common.

Upupidæ

183. *Upupa africana*, Bchst. Middle reaches of the Pangani, III.

184. *Irrisor senegalensis somaliensis*, Grant. Njiri, VI.; Matiom, XI.

185. *Rhinopomastus cabanisi* (Erl.). Ngaptuk, X.; Kitumbin Volcano, IX.

The tree-hoopoes are very shy birds. The mocking-hoopoes cling to the bark of large trees like woodpeckers. I have observed them hanging head downward. These birds have a strange shrill call and keep bowing their heads in a very peculiar way.

Caprimulgidæ

186. *Caprimulgus frenatus*, Salvad. North-west Kilimanjaro, VIII.

187. *Caprimulgus fossei* (Verr.) Hartl. Dönje Erok, VIII.

I found these nightjars breeding during March. Rising on their wings they utter a very low, hardly perceptible, call. Not quite fully fledged young ones were discovered by me in November, near the Meru Mountain.

Macropterygidæ

188. *Apus apus* (L.). Dönje Erok, XI.; Kilimanjaro, XII.

189. *Apus æquatorialis* (v. Müller). Dönje Erok, XI.; Pare, VIII.

Under certain atmospheric conditions these two species of swift glide swiftly across the velt.

190. *Apus streubeli* (Hartl.). Marangu, V.

191. *Apus affinis* (Gr. Hardw.). Masai-land.

192. *Tachornis parvus myochrous* (Rchw.). Mruasi Pangani, 22, VII.

Hirundinidæ

193. *Riparia cincta* (Bodd.). Masai-land.

I observed these martins on the steep banks of a dry torrent-stream in December.

194. *Riparia rufigula* (Fschr., Rchw.). Ngaptuk, X.; Dönje Erok, IX.; Kilimanjaro, VII.

195. *Hirundo griseopyga*, Sund. Njiri, VI.

196. *Hirundo rustica*, L. Upper reaches of the Pangani, IV.

197. *Hirundo smithi*, Leach. Moshi, IV.

198. *Hirundo puella*, Tem., Schl. Masai-land.

199. *Hirundo monteiri*, Hartl. Ngaptuk, X.; Dönje Erok, IX.

200. *Hirundo emini*, Rchw. Njiri, V.; Dönje Erok, IX.; Kilimanjaro.

Large flocks of *Hirundo monteiri*, *rustica*, *emini*, and *puella* were hunting for food during the November evenings at a height of 7,000 feet on the Ngaptuk Mountains.

201. *Psalidoprocne holomelæna* (Sund.). Dönje Erok, IX. Masinde.

Musicapidæ

202. *Bradornis pallidus murinus*, Finsch, Hartl. Moshi, IV.

This pretty flycatcher is extremely tame.

203. *Bradornis griseus*, Rchw. Njiri, VII.; Ngaptuk, X.; Dönje Erok, VIII.; Kilimanjaro, VII.

204. *Melænornis ater tropicalis* (Cab.). Njiri, VI.; Moshi, IV.

205. *Muscicapa grisola*, L. Njiri, VII.; Moshi, XII.

206. *Alseonax infulatus* (Hartl.). Victoria Nyanza; Kitoto, XI.

207. *Alseonax murinus*, Fschr., Rchw. Dönje Erok, IX.; Moshi, IV.; Kilimanjaro, VII.; Nguaso Njiro, X.; Geleï Volcano, X.

208. *Chloropeta natalensis masaica*, Fschr., Rchw. Kirarágua, West Kilimanjaro.

209. *Bias musicus* (Vieill.). Masai-land, Para ya Mabogo, III.

210. *Batis puella*, Rchw. Dönje Erok, Ngaptuk, X.; Matiom, X.; Geleï Volcano, X.; Kilimanjaro, VII.; Moshi, IV.

211. *Tchitrea perspicillata suahelica* (Rchw.). Merker Lakes, XI.; Dönje Erok, IX., XI.; Moshi, IV., XII.

Towards the evening these birds choose their resting-places in the high and dry branches of trees, standing in a thick and impenetrable pori-tree.

Laniidæ

212. *Eurocephalus rüppelli*, Bp. Njiri, VI.; middle reaches of the Pangani, III.; Dönje Erok, VIII.; Yumbe ya Mawe, IV.

This shrike is a very shy and wary bird.

213. *Prionops talacoma*, A. Sm. Moshi, IV., XII.

214. *Nilaus afer minor*, Sharpe. Njiri, VII.; Ngaptuk, X.; Dönje Erok, VII., IX.

215. *Pomatorhynchus australis minor* (Rchw.). Njiri, VI.; Dönje Erok; Moshi, IV., XII.

216. *Chlorophoneus quadricolor* (Cass.). Moshi, IV.

217. *Chlorophoneus sulphureopectus chrysogaster* (Sw.). Ngaptuk, X.; Dönje Erok, XI.

This shrike's call is according to the chromatic scale *c*, *d*, *g*, *g*, *g*. The bird, hidden among the leaves of shrubs, repeats this call frequently.

218. *Pelicinius cathemagmenus* (Rchw.). Dönje Erok, IX.; Yumbe ya Mawe IV.

219. *Laniarius funebris* (Hartl.). Ngaptuk, X.; Kilimanjaro VII.; Moshi, IV.

This shrike utters metallic bell-like calls.

220. *Laniarius æthiopicus* (Gm.). Moshi, IV., XII.

The sustained sweet notes uttered by this shrike always indicate the presence of water.

221. *Dryoscopus cubla hamatus* (Hartl.). Dönje Erok, IX.; Moshi, IV.

222. *Urolestes æquatoriatis*, Rchw. Masai-land.

223. *Lanius humeralis*, Stanl. Moshi, IV., XII.

224. *Lanius caudatus*, Cab. Middle reaches of the Pangani; Njiri, VI.

225. *Lanius minor*, Gm. Yumbe ya Mawe, IV.; Moshi, IV.

This European shrike I found in April.

226. *Lanius collurio*, L. Moshi, IV.; Mumias, Victoria Nyanza, XII., I.

This red-backed shrike emigrates during the winter months very far south. Mr. F. G. Jackson told me that numerous birds of this species had been observed near the Nayasha Lake, arriving there from more southern climes.

227. *Sigmodus tricolor* (Gray). Arusha Djou, IX.

These shrikes were mostly found on high trees near the clearings of high-timbered forests.

Corvidæ

228. *Corvus scapulatus*, Daud. Dönje Erok, XI.

229. *Corvultur albicollis* (Lath.). Masai-land.

230. *Heterocorax capensis minor* (Heugl.). Mumias, Victoria Nyanza, XII.

This crow was frequently met with in January.

Dicruridæ

231. *Dicrurus afer* (A. Lcht.). Dönje Erok; Ngaptuk, X.; Moshi, IV.; Kilimanjaro, VII.

Oriolidæ

232. *Oriolus oriolus* (L.). Ngaptuk.

I found the European oriole in all these regions during the winter months.

233. *Oriolus larvatus rolleti*, Salvad. Dönje Erok, IX.; Moshi, XII.; Kibwesi, II.

The call is very much like that of the European oriole, but with a slight difference.

Sturnidæ

234. *Buphagus erythrorhynchus* (Stanl.). Dönje Erok.

This ox-pecker often alights on rhinoceroses, buffaloes, and tame cattle. The bird is very tame when the companion of domestic cattle, but rather shy and distrustful when the comrade of wild animals.

235. *Perissornis carunculatus* (Gm.). Njiri, V.; Dönje Erok, IX.; Yumbe ya Mawe, IV.; Lafitti Mountains, III.

Very numerous flocks of these birds were found near the Victoria Nyanza in November; they behaved very much like common starlings. In the company of other small birds they flitted round the pastures and meadows, sometimes perching on dead trees.

236. *Spreo superbus* (Rüpp.). Njiri, V., VI., VIII.; Dönje Erok, IX.

This starling is the faithful companion and associate of *Dinemellia dinemelli*. The observation which Boehm has made on the comradeship of the great shrike and the weaver-bird mentioned, applies to the friendly companionship between *Spreo superbus* and *Dinemellia*. They chase one another like butterflies, perch side by side on trees, and show the greatest friendship for each other.

237. *Cinnyricinclus verreauxi* ([Boc.] Finsch, Hartl.). Middle reaches of the Pangani, III.; Moshi, IV., XII.

238. *Stilbopsar stuhlmanni*, Rchw. Western Kilimanjaro, II.

239. *Cosmopsarus regius*, Rchw. Pare Mountain, I.

Ploceidæ

240. *Textor albirostris intermedius*, Cab. Middle reaches of the Pangani, III.; Njiri, V.; Ngaptuk, X.; Dönje Erok, IX.; Korongi, III.; Lafitte Mountains, III.

In March I found these weaver-birds breeding. The whitish, or green-whitish, eggs have very fine grey or brown spots, and measure 20 to 30 × 19 to 20 mm.

241. *Dinemellia dinemelli* ([Hort.] Rüpp.). Njiri, V., VI.; Dönje Erok, VIII.; Yumbe ya Mawe, IV.

242. *Sporopipes frontalis* (Daud.). Njiri, VI.; Dönje Erok, IX.

243. *Ploceus reichenowi* (Fschr.). Moshi, IV., XII.

244. *Ploceus melanoxanthus* (Cab.). Middle reaches of the Pangani, III.; Pare, II.; Dönje Erok, XI.

245. *Ploceus ocularius croactus* (Hartl.). Moshi, IV., XIII.

246. *Ploceus rubiginosus*, Rüpp. Njiri, VIII.; Dönje Erok, IX.; Ngaptuk, X.; Merker Lakes, XI.

I found the weavers breeding February 28th. The eggs, not seen before, are light blue, and measure 12 to 14 × 5 to 6·5 mm.

247. *Ploceus nigriceps* (Lay.). Campa ya Simba, XII.; Moshi, IV., XII.; Kilimanjaro, VIII.

I met with large colonies of these weaver-birds near Masongoleni (near Kibwezi). They had just built their wonderful nests. The eggs were of a light bluish colour, with reddish-brown speckles. The nests without a tunnelled entrance were woven from the broader kind of sedge-grass; the inside, or interior, was lined with the green leaves (now of course dried up) of the tall acacia-trees only.

248. *Ploceus spekei* (Heugl.). Merker Lakes, XI.

249. *Ploceus jacksoni*, Shell. Campi ya Simba (Djipe Lake), XII.

250. *Ploceus cabanisi* (Ptrs.). Masimani, III.

251. *Ploceus aureoflavus*, A. Sm. Masailand.

252.* *Ploceus schillingsi*, Rchw. Njiri, VII., VIII.; Ngaptuk, X.; middle reaches of the Pangani, III.; Masimani (Middle Rufu), III.

* *Orn. Motsb.*, 1902, p. 158 (?)

This species of weaver-bird was discovered by the author: it is very much like *P. bojeri*. These birds have a golden brownish ring round the neck; the body is much yellower, and not throughout of the golden hue of that of *P. bojeri*. The forehead is real gold-coloured, but the nape of the neck is more of a golden brown. The wings on both sides are not of the washed-out yellowish tint, but more blackish-brown, and are marked by distinctive broad bands of a light golden colour. Length, about 155; wings, about 75; tail, about 60; beak, about 16; height, about 22 mm. This beautiful weaver-bird builds its nest only over the water. I found a number of golden cuckoos (*Chrysococcyx cupreus*, Bodd.) in the nests during March.

253. *Ambliospiza unicolor* (Fschr., Rchw.). Moshi, XII.

254. *Plocepasser melanorhynchus* (Rüpp.). Nguaso Nyiro, X.

The note of this bird bears some resemblance to the call of the chaffinch (*Fringilla cœlebs*).

255. *Quelea sanguinirostris æthiopica* (Sund.). Njiri, V.; Dönje Erok, IX.; Ngaptuk, XI.; Yumbe ya Mawe, IV.; Kirarágua, XI.

256. *Pyromelana nigroventris* (Cass.). Njiri, V.; Singiwi, XII.

257. *Euplectes xanthomelas*, Rüpp. Moshi, IV.; Kilimanjaro, VIII.

258. *Coliuspasser laticauda* (Lcht.). Dönje Erok, IX.; Kirarágua, XI.; Moshi, IV.

259. *Coliuspasser albonotatus* (Cass.). Dönje Erok, IX.

260. *Coliuspasser eques* (Hartl.). Dönje Erok, IX.; Ngaptuk, X.

261. *Amadina fasciata* (Gm.). Dönje Erok, VIII., IX.; Njiri, VI.; Ngaptuk, X.; Kilimanjaro, VIII.

262. *Spermestes nigriceps*, Cass. Campi ya Simba, XII.; Kilimanjaro, VII.

263. *Spermestes caniceps* (Rchw.). Dönje Erok, VIII.; Ngaptuk, VII.

264. *Aidemosyne cantans orientalis*, Lz. Hellm. Dönje Erok, VIII.; Kilimanjaro, VIII.

265. *Pytilia melba* (L.) Njiri, VI.; Dönje Erok, IX.; Kilimanjaro, VIII.; Ngaptuk, X., XI.

266. *Pseudonigrita arnaudi* [(Puch.) Bp.]. Njiri, V.; Dönje Erok, VIII., IX.; Marago Kanga V.

The nests are closed at one end during the breeding-season; at other times they are open on top and bottom. I found small clusters of them hung on young acacia-trees.

267. *Pseudonigrita cabanisi* (Fschr. Rchw.). Yumbe ya Mawe, IV.; Laffiti Mountains, III.

268. *Estrelda estrelda minor* (Cab.). Njiri, VI., VIII.; Campi ya Simba, XII.

269. *Estrelda rhodopyga* (Simd.). Njiri, II.; Dönje Erok, VIII.; Ngaptuk, X., I.; Middle reaches of the Pagani, III.

270. *Estrelda erythronotus* (Vieill.). Ngaptuk, X.

271. *Lagonosticta bruneiceps*, Sharpe. Dönje Erok, IX.; Ngaptuk, X., I.; Moshi, IV., XII.

272. *Ortygospiza polyzona* (Tem.) Kilimanjaro, VIII.

273. *Uræginthus bengalus* (L.). Upper reaches of the Pangani, IV.

274. *Uræginthus cyanocephalus* (Richm.). Njiri, V.; Ngaptuk, X.

275. *Uræginthus ianthinogaster*, Rchw. Dönje Erok, VIII.; Ngaptuk, X., XI.; Kitumbin Volcano tableland, X.

276. *Hypochera amauropteryx*, Sharpe. Moshi, XII.

277. *Vidua hypocherina*, Verr. Ngaptuk, X.

278. *Vidua serena* (L.). Njiri, VI.; Ngaptuk, X.; Rombo, V.; Kilimanjaro, VIII.; Campi ya Simba, XII.

Fringillidæ

279. *Passer gongonensis* (Oust.). Njiri, VI., VIII.; Ngaptuk, X.

This large sparrow is often met with on the westerly ranges and plateaus of Kilimanjaro. Its call resembles very much that of the house-sparrow.

280. *Passer rufocinctus*, Fschr., Richw. Kilimanjaro, VIII.

This bird, too, is very like the house-sparrow.

281. *Petronia pyrgita* (Heugl.). Dönje Erok, VIII.; Kilimanjaro, VIII.

282. *Auripasser emini* (Hartl.). Ngaptuk, X.

283. *Poliospiza striolata* (Rüpp.). Kirarágua, XI.

284. *Poliospiza reichenowi* (Salvad.). North-west of Kilimanjaro, VII., VIII.

285. *Serinus dorsostriatus*, Rchw. Dönje Erok, XI.

286. *Serinus icterus madarászi*, Rchw. Masai-land.

287. *Spinus citrinelloides hypostictus*, Rchw. Masai-land.

288. *Emberiza flaviventris*, Steph. Ngaptuk, X.

289. *Fringillaria tahapisi* (A. Sm.). Dönje Erok, XI.; Yumbe ya Mawe, north-west of Kilimanjaro, VII., VIII.

During the dry season the bird is often found near the rocky ravines of the tableland of the west Kilimanjaro, which are still then running with water. The bird is there very shy and cautious.

Motacillidæ

290. *Anthus caffer*, Simd. Dönje Erok, VIII., IX.

This pipit is for the first time proved to occur in East Africa.

291. *Anthus rufulus cinnamomeus*, Rüpp. Kirarágua, XI.

292. *Anthus nicholsoni*, Sharpe. Kilimanjaro, VII.

293. *Budytes flavus* (L.). Kavirondo, XI.; Meru Mountain, X.; Velt, XI.

In November I found the yellow wagtail in large flocks near Kavirondo on the Victoria-Nyanza; in January between Lake Lake Victoria and the Kikuyu district.

294. *Motacilla vidua*, Sund. Masai-land, III., VI.

295. *Macronyx croceus* (Vieill.) Masai-land.

The wonderfully yellow-coloured belly of this bird can only be distinguished in the open air, when the light is very favourable indeed.

296. *Macronyx aurantigula*, Rchw. Njiri, VI.; Dönje Erok, VIII.; Ngaptuk, X.; Ngare Nyuki, XI.; Yumbe ya Mawe, IV.

297. *Tmetothylacus tenellus* (Cab.). Middle reaches of the Pangani, II.; Yumbe ya Mawe, IV.

The beautiful male bird is black and yellow in colouring. At the mating time, in March, I saw it on the velt, near Pare ya Maboga, going through a most wonderful performance. It ascended high in the air, and after some extraordinary evolutions perched on a tree. I was reminded of a canary escaped from its cage. The green grass of the velt was then very high and I myself in a great hurry, and so I did not succeed in finding its nest. I suppose the birds only began building their nests about this time of the year. The nearest water-hole was to be found at a distance of one hour and a half away from the place the birds frequented.

Alaudidæ

298. *Mirafra poecilosterna* (Rchw.) Yumbe ya Mawe, II.

299. *Mirafra intercedens*, Rchw. Njiri, VI.; Ngaptuk, X.; Dönje Erok, VIII., IX.; Matiom, XI.; Kilimanjaro, VIII.

300. *Mirafra cantillans* (Jerd.) Blyth. Gonga Plains, XII.

301. *Mirafra albicauda*, Rchw. Dönje Erok, IX.

302. *Mirafra fischeri* (Rchw.). Kahe, IV.; Mirwani Kibwezi, II.

This lark produces a very peculiar rattling kind of noise which may be heard a long way off. I have heard it in January, February, and March. Even when 200 paces from the camp you imagine when the bird commences the noise that it is quite near. This rattling is effected through a rapid movement of the wings; I ascertained this myself for a fact. The bird only produces this rattle when it rises a few feet from the ground. This rattling resembles the noise created by beating a thin board with whalebone rods. The bird often perches on dead branches.

303. *Mirafra africana athi*, Hartl., Kirarágua Matiom, XI.; Kilimanjaro, VIII.

304. *Pyrrhulauda leucotis* (Stanl.). Kilimanjaro, VIII.

305. *Pyrrhulauda leucopareia* (Fschr.). Njiri, V.; Yumbe ya Mawe, IV.; Kilimanjaro, VIII.

306. *Calandrella athensis* (Sharpe). Matiom, XI.

Pycnonotidæ

307. *Phyllastrephus nigriceps* (Shell.). West of Kilimanjaro, VII.

308. *Phyllastrephus striifacies* (Rchw. Neum.). Dönje Erok, IX.

309. *Andropadus insularis*, Hartl. Middle reaches of the Pangani, VII.

310. *Pycnonotus tricolor* (Hartl.). Dönje Erok, IX.; Matiom, X.; Moshi, IV., XI., XII.

311. *Pycnonotus layardi* (Gurn.) Kilimanjaro.

This bulbul is found everywhere, and in large flocks. Its well-known song of four notes is sometimes interrupted by a call-note at intervals.

Zosteropidæ

312. *Zosterops flavilateralis*, Rchw. Middle reaches of the Pangani, III.; Dönje Erok, VIII., IX.; Meru Mountains.

Nectariniidæ

313. *Anthreptes collaris hypodylus* (Gard.). Moshi, IV.

314. *Chalcomitra obscura ragazzii* (Salvad.). Moshi, IV.

315. *Chalcomitra kirki* (Shell.). Moshi, IV., XII.

316. *Chalcomitra æquatorialis* (Rchw.). Ngaptuk, X.; Moshi, IV.

317. *Cinnyris venustus falkensteini*, Fschr., Rchw. Njiri, V., VII.; Ngaptuk, X., XI.

318. *Cinnyris mariquensis microrhynchus*, Shell. Masai-land.

319. *Nectarinia kilimensis*, Shell. Moshi, IV., XII.

Paridæ

320. *Parisoma bocki*, Rchw. Dönje Erok, VIII.; Ngaptuk, X.

321. *Parus fringillinus*, Fschr., Rchw. Ngaptuk, X.

One specimen of this tit was secured by Dr. Fischer on the Meru Mountain. Three specimens were collected by me on the Ngaptuk Mountain, where small flocks of them had gathered during the dry season.

322. *Anthoscopus musculus* (Hartl.) Njiri, VI.

Timeliidæ and Sylviidæ

323. *Crateropus jardinei kirki*, Sharpe. Moshi, IV.

324. *Crateropus hypoleucus*, Cab. Dönje Erok, IX.; Rombo, V.

A few of these babblers, sitting on the same branch, joined in the loud and peculiar screaming started suddenly by one bird, which ends abruptly. This screaming is accompanied by tail-wagging and bowing.

325.* *Erythropygia plebeia*, Rchw.

The third species discovered by the author. It resembles *E. pœnæ*. The upper side is more darkly coloured, and the back of the head and the back itself are brownish, nearly red-brown. The belly of this bird is rather darker than that of *E. pœnæ*; the crop and sides are of a muddy brown. The black stripe on the tail is much smaller than that of the *E. pœnæ*, and only 10 mm. broad. Of the tail-feathers the middle one is uniformly brown. The margins of the sides of the tail are dirty red-brown, but the outermost is of a whitish colour. Length, nearly 145; wings, 85; beak, 15; legs, 24 to 24 mm.

326. *Erythropygia brunneiceps*, Rchw. Kilimanjaro, VII.

327. *Tarsiger orientalis*, Fschr., Rchw. Kilimanjaro, VII.

328. *Cichladusa guttata rufipennis* Sharpe. Dönje Erok, XI.

The lively and melodious warbling of this species surpasses all other East African bird-songs.

329. *Cossypha subrufescens*, Boc. Dönje Erok, IX.; Kilimanjaro, XIV.

330. *Argya rubiginosa*, Rüpp. Masai-land.

331. *Melocichla mentalis orientalis* (Sharpe). Kirarágua, XI.

332. *Cisticola chiniana* (A. Sm.). Dönje Erok, VIII., IX.; Njiri, VII.

I caught a specimen with my hands. The sharp-edged awns of some kind of grass had locked its wings.

333.† *Cisticola schillingsi*, Rchw.

This bird resembles the *C. chiniana*, except that the upper part

* *Ornit. Motsb.*, 1904, pp. 27, 28.

† Discovered by Mr. Schillings on the Ngaptuk, X., and Dönje Erok, IX.

of the head is not reddish-brown but darkly lineated or striped like the back. The lines are more distinctly marked than those of the *C. chiniana*. The edges of the tail-tip are pure white. The upper-parts are faint gray-brownish, but distinct blackish-brown lines are visible. Crop, belly, the underside of the wings, and lower part of the tail are of a faint dirty yellow; the thighs are rust-coloured. The tail-feathers are dun-coloured, with a black band before the whitish ends; and the middle ones have a band of a rather faint black colour before the pale-brown end-edge. Length, nearly 125; wings, 63 to 66; tail, 57; beak, 11 to 12; legs, 22 mm.

334. *Cisticola terrestris* (A. Sm.). Dönje Erok, VIII.; Kilimanjaro, VII.

335. *Cisticola nana*, Fschr., Rchw. Dönje Erok, IX.

336. *Cisticola rufopileata*, Rchw. Kilimanjaro, VII.

337. *Bradypterus bradypterus* (Vieill.). Njiri, VI.

338.* *Calamocichla schillingsi*, Rchw. Njiri, VI.; Masimani, IX.; Korrongo, III.; middle reaches of the Rufu River.

This species, discovered by the author, is nearly related to *C. plebeia* of the Cameroons, but has shorter legs. Upper-part red-brown, redder on the rump, and upper tail-feathers; a light stripe above the beak, throat and breast white; crop, sides, and lower side of tail dun-coloured. The wing-coverts are pale brown, wings dark brown, red-brown outside, cream-coloured inside. Tail-feathers brownish, flanks reddish with the edges brownish-coloured. Length, about 170 to 190; wings, 77 to 85; beak, 15 to 16; legs, 21 to 22 mm.

339. *Camaroptera griseoviridis* (v. Müller). Middle reaches of the Pangani, III.; Dönje Erok, VIII.; Moshi, IV.

340. *Sylvietta jacksoni*, Sharpe. Ngaptuk, X.; Moshi, XII., IV.

341. *Apalis golzi* (Fschr., Rchw.). Ngaptuk, X.; Moshi, XII.

342. *Orthotomus erythropterus* (Jard.). Masai-land.

343. *Prinia mystacea*, Rüpp. Ngaptuk, X.; Njiri, V.; Dönje Erok, VIII.; Moshi, XI.

344. *Phylloscopus trochilus* (L.). Moshi, XII.

* *Ornit. Motsb.*, 1904, p. 95.

This European warbler was observed at different times near Kilimanjaro.

345. *Acrocephalus streperus* (Vieill.). Dönje Erok, XI.; Njiri swamps.

The sedge-warbler is frequently to be found near the Njiri swamps.

346. *Silvia nisoria* (Bchst.). Nguaso Ebor, X.

347. *Sylvia simplex*, Lath. Ngaptuk, X.

348. *Monticola saxatilis*, L. Masai-land. On the velt near the Njiri swamps very numerous, XI.; Kibosho Plains, XI.

I met the European rock-thrush in December 1899, in that part of the velt which is near to the British frontier, in the direction of the Djo'ulu Mountains. They are so numerous that I counted nearly seventy birds on one day; but I only shot two specimens, as I had no fowling-piece with me, but only a rifle or heavy gun. It was not easy to secure this small bird without damaging it too much. In the velt near Kibosho I shot another specimen in November.

349. *Monticola cyanus* (L.) Ngaptuk, XI.

350. *Turdus deckeni*, Cab. Ngaptuk, 2,000 metres high, X.

Fully fledged young bird. Van der Decken's thrush was only found on the Ngaptuk Mountain and on the Gelet Volcano, 6,000 feet high. In December I killed a young fully fledged bird near the Ngaptuk Mountain.

351. *Saxicola pleschanka* (Lepech.). Matiom Mountain, XI.

I frequently found this inhabitant of the Asiatic steppe in the Masai velt, to which it migrates during the winter months.

352. *Saxicola isabellina*, Rüpp. Masailand.

353. *Saxicola pileata* (Gm.). Upper reaches of the Pangani, IV.; Yumbe ya Mawe, IV.; Njiri, V.

354. *Pratincola salax*, Verr. Kilimanjaro, IX.

355. *Erithacus africanus* (Fschr., Rchw.). Kibwezi, II.; Djipe Lake, XII., very numerous; Ngare Nyussi, on the Meru Mountain, IX.; Kiziwani (Kisuani) on the Pare Mountain, XII.

At the beginning of February I heard for the first time the beautiful warbling of this nightingale, two hours before Kibwezi; I was moving from the Victoria Lake towards Kilimanjaro.

Thence to Massongoleni and a little further this bird was so frequently found that I could count twenty-five males to whose warbling I had listened. This warbling resembles that of a weak-voiced nightingale, or a nightingale with its notes not yet fully developed, but the tune seemed to me in a lower key and more that of the bastard-nightingale. In March 1905 I heard these nightingales on the Rufu River; they were very numerous near the caravan-road between the Jipe Lake and the camp at Kiziwani (Kisuani). In this district, which would suit the European nightingale well, I heard a great number of singing male birds. I also found the same species near the Meru Mountain and Mto Nyuki.

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